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The Marine Observer

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THE MARINE OBSERVER

A QUARTERLY JOURNAL OF MARITIME METEOROLOGY PREPARED BY THE MARINE DIVISION OF THE METEOROLOGICAL OFFICE

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COVER PHOTOGRAPH: April evening on the North Sea Canal at IJmuiden, taken in 1988 by Captain T.S. Nurcombe, Master, m.v. *Jasmine B.*

Letters to the Editor, and books for review, should be sent to the Editor, The Marine Observer, Meteorological Office, Eastern Road, Bracknell, Berkshire RG12 2UR

LONDON: HER MAJESTY'S STATIONERY OFFICE

Report of Work for 1988

(MARINE DIVISION OF THE METEOROLOGICAL OFFICE)

1. Voluntary Observing Fleet

On 31 December 1988 the United Kingdom Voluntary Observing Fleet (VOF) consisted of the following:

(a) 425 Selected Ships.
(b) 2 Supplementary Ships.
(c) 48 'Marid' vessels.
(d) 1 automatic and 2 manned Light-vessels and 1 Light-tower.
(e) 2 Auxiliary Ships.
(f) 25 Oil Rigs and Platforms.

There were a number of significant recruitments during the year, including the NATO Research Vessel *Alliance*, the Training Ships *Earl of Romney* (The Marine Society) and *James Cook* (Ocean Youth Club), the sailing yacht *Ocean Goose* on her delivery voyage from Lymington to the West Indies under the command of a former Port Line Master; and an experimental fishing vessel outward bound to the Falklands. Unfortunately, several withdrawals of equipment from ships being sold were also necessary, but the VOF complement remains little changed overall.

A full set of instruments, consisting of precision aneroid barometer, marine barograph, dry- and wet-bulb thermometers in screens and sea-temperature thermometers with specially designed bucket, is supplied to Selected Ships and Oil Rigs and Platforms with which to make six-hourly surface observations at every possible synoptic hour, at sea or at anchor. To assist in the enhancement of synoptic weather charts produced for the benefit of United Kingdom and Northern European areas in general, ships in the North Atlantic are requested to transmit weather messages for observations made every three hours, when they are positioned east of longitude 30° W.

Supplementary and Auxiliary Ships are equipped with fewer instruments but make valuable if smaller contributions towards the pool of weather data. 'Marid' vessels use the sea thermometers supplied to take sea temperatures when in coastal waters, particularly in the North Sea, to provide information to aid the forecasting of fog.

The first automatic Light-vessel to be equipped with a Marine Automatic Weather Station (MAWS) was deployed on the *Smith's Knoll* station at the end of October. The MAWS has twin data-capture systems providing information on wind direction and speed, air and sea temperatures, relative humidity, pressure, visibility and significant wave height. Two separate transmission channels via satellite are fitted, thus providing four possible ways for the data to be received. Other light-vessels are due to be fitted with MAWS in the coming year, thanks to the co-operation of Trinity House personnel.

The Oil Rigs and Mobile Platforms, a small proportion of the many units based in the North Sea, range from *F.G. McClintock* in Audrey field in the south, to *Dixylin Field-96* in the Thistle field in the north. Their weather observations constitute a very important part of all data received from the area between the U.K. and Europe.

The number of ships equipped with the Meteorological Observing System for Ships (MOSS) remains at about 20, the latest to be fitted with one of these units containing VDU format and automatic transmission being *West Moor*, managed by Denholm (Isle of Man) Ltd., to enhance her radio weather message capability when in the Falkland Islands region.

The Automated Shipboard Aerological Programme (ASAP) functions on three ships of the U.K. VOF, *CanMar Ambassador*, *OOCL Challenge* and *CanMar Europe*. Experience with this equipment used for making radiosonde ascents from merchant ships has led to useful modifications, with the added benefit that the accompanying Scientific Officers (one per ship) have provided help with the regular surface observations (see article on page 78).

Two special projects connected with the quality of weather data received from merchant ships have been under way during the year. The Operational World Weather Watch System Evaluation — North Atlantic (OWSE-NA) continued to the end of the year to provide a summary of assessments of the impact of random data on forecasts. On a fresh initiative from WMO, nine U.K. ships were requested to participate in the Voluntary Special Observing Project–North Atlantic (VSOP-NA), by coding nine additional abridged groups to help determine if the mounting and location of weather instruments relative to the waterline and ships' structures have an effect that is constant for each ship. This project is expected to continue at least until the end of 1989.

Anchored and drifting buoys deployed in various locations in the North Atlantic provide additional useful meteorological data, automatically collected and transmitted via satellite to be passed to various National Meteorological Centres by the Global Telecommunications System (GTS).

Recruitment and maintenance of the U.K. VOF is undertaken by the seven Port Meteorological Officers strategically based around the country and by the two Offshore Advisers located at Aberdeen and Bracknell respectively. Much vital assistance in supplying stationery and/or equipment to ships overseas is provided by the counterparts in many countries, notably in the ports of Rotterdam, Hamburg, Bremerhaven, Le Havre, Amsterdam, Hong Kong, Singapore, Cape Town, Wellington, Melbourne, Montreal, Newark and Piraeus. The co-operation of Port Meteorologists in supporting voluntary observing ships of any country is a vital part of the WMO network.

2. Ocean Weather Ship Programme

Ocean Station Vessel (OSV) *Cumulus* maintained her vigil at station 'Lima' in position 57° N, 20° W in the North Atlantic in accordance with obligations undertaken on behalf of the North Atlantic Ocean Stations (NAOS) Board. Norway and the U.S.S.R. continued to man stations 'Mike' and 'Charlie'. The *Cumulus* returned to her home base at Greenock for one or two days every five weeks for replenishment and crew change, with the exception of the annual drydocking period at Milford Haven, where she was inspected by a representative of her former owners, the Netherlands Government, to whom she will be re-sold on termination of Weather Ship duties for the U.K. This now seems likely to be at the end of 1991, following a period of independent operation consequent upon the expiration of the NAOS agreement on 30 November 1989. After that date it is probable that *Cumulus* will not man a fixed station but will alternate between 'Lima' and the former French station 'Romeo' in position 47° N, 17° W, as dictated by seasonal considerations. Meanwhile the Met. Office

Marine Superintendent was elected as Vice-President of NAOS.

Whilst managed by J. Marr & Son of Hull, *Cumulus* had on board the usual complement of Meteorological Office staff to carry out routine hourly surface observations and six-hourly radiosonde soundings. Other projects for scientific bodies ashore were also progressed. As part of the WMO Voluntary Co-operation Programme the Port Meteorological Officer from Mombasa undertook a five-week acclimatization voyage on the Weather Ship; the experience gained is expected to benefit the Marine Department of the Kenya Meteorological Service in their future plans. In August the crew of *Cumulus* rescued two Swedish airmen from the sea after they had ditched their small aircraft near the ship with only a small reserve of fuel left on board. They had gone off course whilst *en route* from Greenland to Iceland and, after sending out a PAN message, had been guided to the Weather Ship by the Nimrod aircraft deployed from RAF Kinloss for the purpose. After recovering from shock and exposure the two airmen were transferred to Stornoway Hospital 36 hours after their rescue by a H.M. Coastguard Sea King helicopter (see photograph opposite page 60).

3. Ship Routeing

The majority of the ship routeing services were transferred onto computer programmes by the end of 1988 thus giving METROUTE, the Met. Office's specialized routeing service for shipmasters, owners and charterers, greater capacity to deal with increased business. New clients included the Netherlands fleets of Shell International and Esso International, and Cool Carriers of Stockholm, giving access to possible routeing of an additional 180 ships. The service provides guidance world wide to enable ships to pursue their ocean voyages in the safest and most economical ways, using the latest technology to provide data via the Central Forecasting Office in Bracknell. Advice on the movement of tropical cyclones and depressions is also supplied to the many companies that maintain records of these features for litigation and accounting purposes. Other METROUTE contracts included advice to yachts on passage and towage of oil rigs to various locations. Contracts are tailored to clients' requirements and include post-voyage analysis and performance data.

Working closely with the shipmasters administering METROUTE is another overseeing the sea-ice service. Sea ice situation charts are maintained weekly for potentially ice-bound areas of the Baltic Sea, Baffin Bay and the North Atlantic. Users in the northern regions of North America, Europe and Asia receive regular charts; these are also supplied to Lloyd's of London Casualty Department for publication.

4. Services to Shipping

Weather bulletins and gale warnings for commercial shipping and fishing vessels continue to be broadcast by British Telecom International, the BBC and by NAVTEX.

Coast station weather reports broadcast in the coastal bulletins for shipping underwent a single change. Due to the cessation of observing at the Isles of Scilly station the reports for this area now emanate from Land's End. Radio Ulster ceased to broadcast the late night inshore waters forecast and the areas and stations formerly covered were added on to the BBC inshore waters forecast given on Radio 4.

5. Marine Enquiries and Consultancies

Marine data for design and planning purposes were provided for locations as diverse as the Cook Strait (New Zealand), the South China Sea, Strait of Malacca, the Caribbean and the South Atlantic. Closer to home, marine data were also provided to CEGB and contractors involved in the planning stages of the proposed nuclear reactors at Sizewell and Hinkley Point. Considerable effort was spent on compiling and presenting sea state information for the calibration of an airborne radar system during flight trials. Special work continued with the Tropical Ocean and Global Atmosphere (TOGA) programme, involving early collection and quality-control of ship's observations in the tropical belt 30° N to 30° S; many of these data came from ships of the VOF. Production of major software was made in support of METROUTE, allowing all information relevant to a ship routeing to be stored on computer. 'Minimum time' routes, based on five-day model forecasts of winds and waves were produced for guidance of the Master Mariners operating the ship routeing service.

The marine enquiries section received requests from solicitors and marine insurers for hindcast assessments of weather and sea conditions and these continued to be the most numerous of the enquiries received. These related mainly to delays or damage to the cargo or the vessel, but a few concerned loss of life. In this latter category, there was continuing interest in the weather conditions prevailing when the *Derbyshire* was lost in typhoon 'Orchid' in September 1980.

6. Awards to Voluntary Observers

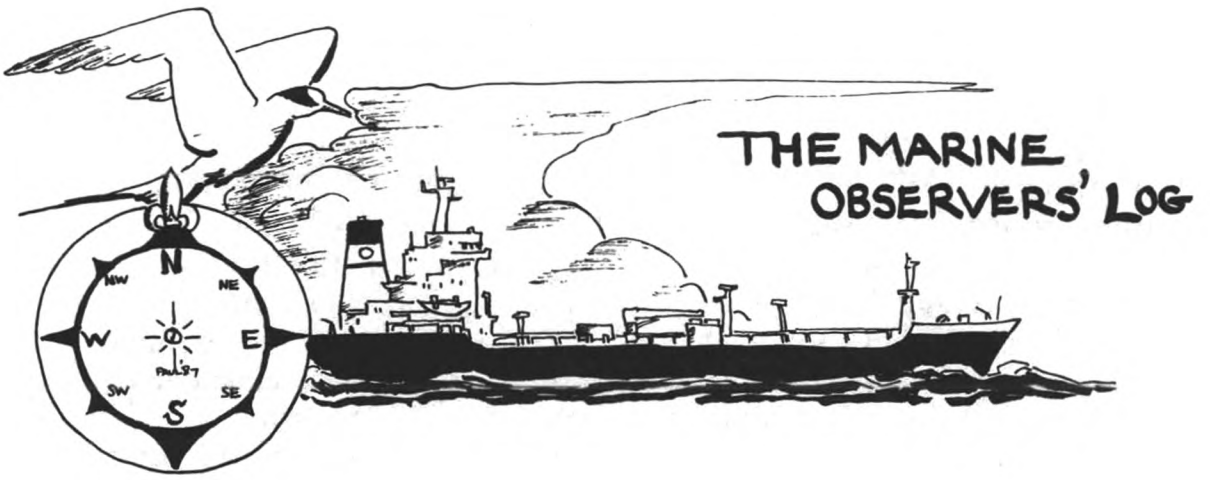
The Director-General presented inscribed barographs to the four shipmasters with the longest and most excellent voluntary observing records for the previous year.

Three hundred books were presented as Excellent Awards to Masters, Principal Observing Officers and Radio Officers in recognition of the best meteorological logbooks submitted in 1987. The chosen books were *The First Eden* by David Attenborough, *Philip's University Atlas* and *Chambers Twentieth Century Dictionary.*

7. Publications

An unusually high number of Marine Division publications required revision before reprinting in new editions. The *Marine Observer's Guide* was completely updated, including the foreword which summarises the work of voluntary observing, and the details of Port Meteorological Officers around the world where ships may obtain stationery, and in a few instances instruments, thus obviating the need to write to Bracknell for replacements on every occasion. Other reprints were made of the *Ship's Code Card*, the *Ship's Code and Decode Book* and the *Ship's Meteorological Logbook*, all with revisions. Special log sheets were printed for ships co-operating in the VSOP-NA scheme mentioned earlier; and when carrying out the annual reprint of the former *Met. Office Leaflet No. 3*, the opportunity was taken to shorten the twelve-word title to *Weather Services for Shipping*. All these new editions will gradually be placed into circulation as previous stocks are exhausted and it may therefore be a year or two before they are seen on some ships.

J.F.T.H.



April, May, June

The Marine Observers' Log is a quarterly selection of observations of interest and value. The observations are derived from the logbooks of marine observers and from individual manuscripts. Responsibility for each observation rests with the contributor.

TROPICAL STORM 'SUSAN'

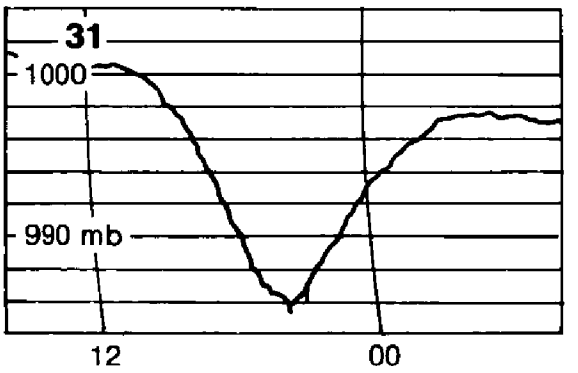
South China Sea

m.v. *Tokyo Bay*. Captain C.R. Short. Jeddah to Busan. Observers: the Master and ship's company.

30–31 May 1988. After clearing Singapore a course was set to pass south of Taiwan, using the Bashi Channel, thence to proceed up the east coast of Taiwan to take full advantage of the Kuroshio current.

On 30 May a fax map was received from Tokyo which indicated a stationary tropical storm, Susan, in a position just north of Luzon, with a central pressure of 998 mb. Additional weather reports were commenced at the request of the Hong Kong Met. Office, all times are GMT; the barograph trace shows the contours of the storm.

Date and time	Wind		Temperature (°C)			Pressure (mb)
	Dir'n	Force	Air	Wet	Sea	
30th 1200	WNW	4	28.5	27.0	28.6	1006.1
1600	SW	4	29.0	26.4	29.0	1006.9
2000	SW	3	28.9	26.7	29.0	1004.9
31st 0001	W	3	29.5	26.8	30.1	1004.3
0400	WNW	3	30.0	26.9	30.2	1003.5
0800	WNW	4	30.0	26.3	29.8	1000.9
1200	NE×N	4	28.3	26.2	29.0	1000.3
1600	NW×W	6	27.0	26.0	27.6	997.4
1700	N×W	6				992.5
1900	N×E	7				987.3
2000	N×E	7	26.9	26.0		987.3
2200	NE×E	7	25.8	25.6		987.1



The storm's position was too close to the coast of Luzon to allow the vessel to pass between it and the Philippines with a sufficient degree of safety; therefore, at 1300 GMT a course of 019° was set. This was done in the hope that the storm would remain stationary for the next 36–48 hours as had been forecast, thereby keeping the ship a good distance from it and the associated effects. All went according to plan for the next 24 hours, and the vessel made a good speed to a SW'ly wind of force 3.

At 0300 on 31 May the vessel's course was altered to 040° to make for the Pescadores Channel to the west of Taiwan. During the afternoon, the weather pattern began to change, indicating that the storm had begun to move approximately 24 hours earlier than predicted. The fax map later indicated that the storm was moving north-west and would pass about 100 n.mile ahead of the ship. In fact, it passed approximately 50 n.mile to the east of the ship while curving to the north-east and proceeding towards Japan via the eastern side of Taiwan.

Position of ship on 30 May at 1300 GMT: 11°22'N, 111°44'E.

Position of ship on 31 May at 0300 GMT: 16°03'N, 113°24'E.

Note. Mr R.D. Whyman, of the Marine Climatology Branch, Met. Office, comments:

'Tropical storm Susan was initially a tropical depression on 29 May near 19° N, 119° E at 0000. It had been upgraded to a tropical storm by 1200 on the 30th and had assumed typhoon status by 1200 on the 31st. This was maintained until 2 June when it was downgraded to tropical storm near 22.5° N, 121.0° E. On 3 June it lost its identity as it merged with an area of low pressure near 35.0° N, 135.0° E.'

TROPICAL DEPRESSION 'VANESSA'

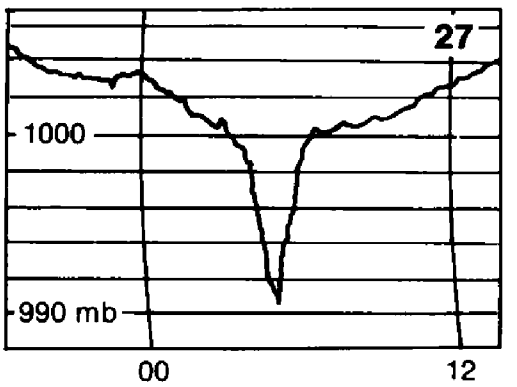
Western North Pacific

m.v. *Equinox*. Captain G.D. Sandercock. Richards Bay to Kwangyang, South Korea. Observers: the Master and ship's company.

26–27 June 1988. Whilst on a northerly course at 12¼ knots north-east of Mindanao, the ship encountered tropical depression Vanessa. The following extracts are taken from the ship's deck and met. logbooks.

Date and time (GMT)	Wind Dir'n	Force	State of sea	Pressure (mb)	Remarks
26th 1900	NW×W	5	Slight	1005.9	Passing showers becoming slight/moderate continuous rain.
2300	W×N	4	Slight	1007.0	Continuous slight/moderate rain.

27th	0001	NW	7/8	Rough	1004.8	Continuous moderate/heavy rain.
	0200	NE	8	High	1001.5	Weather as above.
	0300	ENE	9/10	V. high	1000.3	Rain easing in past hour to become showers. Centre of storm believed to be 30 n.mile south. See barograph trace. Course of ship altered to 065° to keep wind on starboard bow; r.p.m. reduced.



0330	ESE	12	Phenomenal	998.3	Anemometer reads 82 knots. Visibility badly restricted owing to spray over all. Violent rain. Course altered to 100°.
0400	SSE	12	Phenomenal	997.1	Anemometer reads 80–85 knots. Weather as above. Course altered to 110°.
0500	SW	10/11	As above	1002.8	Anemometer reads 55–58 knots. Visibility restricted owing to spray. Course altered to 130°.
0600	SW	8	High	1003.4	Anemometer reads 35 knots.
0700	SW	7	V. rough	1003.5	Course altered back to 000°, full r.p.m.

During the period in which the ship was on reduced r.p.m. her speed was 3–4 knots. Between 0800 and 1300 the wind was SSE'ly, force 6 and the sea remained rough with a confused swell; throughout this time the pressure continued to rise, reaching 1007.6 mb at 1300.

Position of ship on 27 June at 0600 GMT: 10° 30'N, 126° 48'E.

HEAVY WEATHER

Tasman Sea

m.v. *ACT 6*. Captain D.M. Kissane. Wellington to Melbourne. Observers: the Master, Mr A.G. Pritchard, Chief Officer, Mr N.R. Broomhall, 2nd Officer, Mr S.G. Dougal, 3rd Officer and ship's company.

11–12 June 1988. At 1600 GMT the vessel encountered a sudden spell of heavy weather, the pressure variations of which are shown by the barograph trace. The following observations were made during the period.

1600: Pressure drops to 995 mb. Wind W×S'ly, force 9. Overcast with heavy rain and poor visibility; spiralling bands of rain seen on radar, see sketch. Heavy seas and heavy, confused swell.

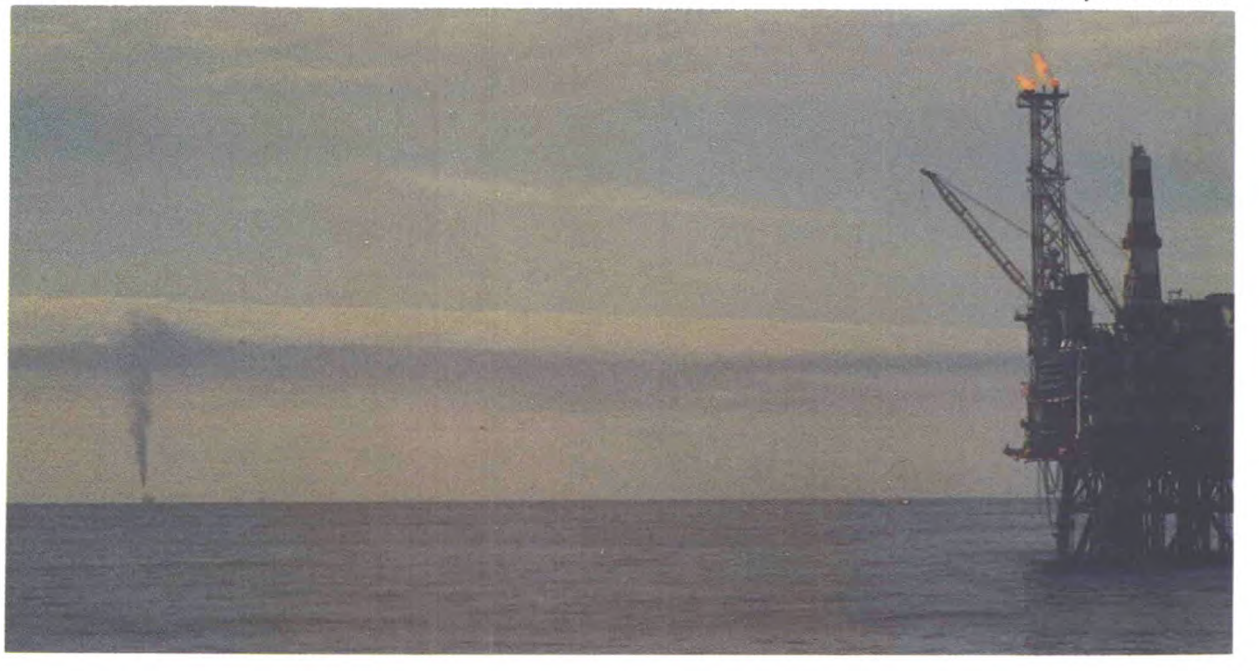
Opposite page 60

Photo. by R. Aran

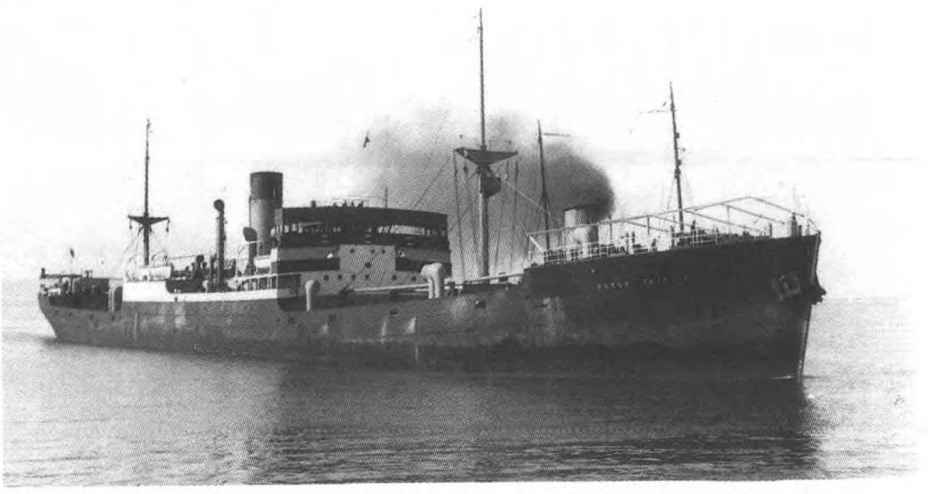
Photo. by Dr F. Evans

Above: H.M. Coastguard helicopter arriving at o.w.s. *Cumulus* to lift off two rescued airmen. (See page 56.) Left: Close-up of fish found on board m.v. *British Ranger*. (See page 68.) Below: Artificial cloud being formed by a Murchison oil field flare, as seen from m.v. *Seagair*. (See page 62.)

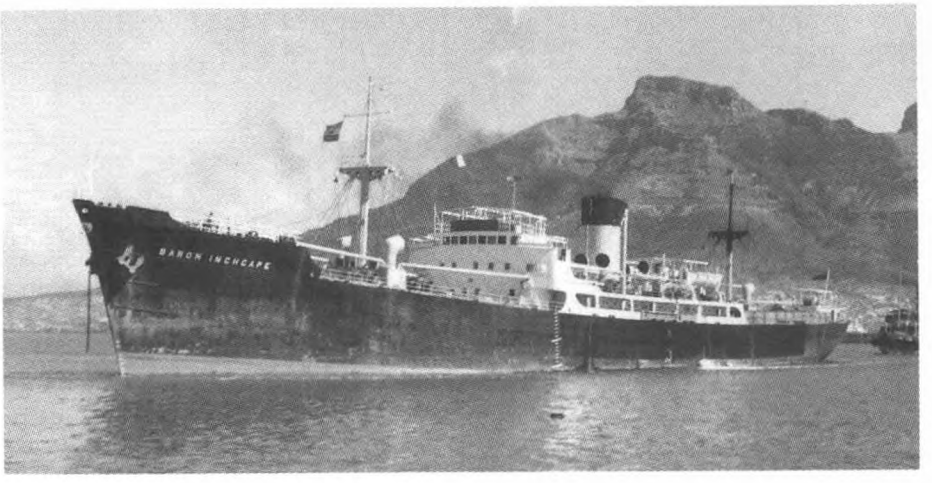
Photo. by A.L. Zambon



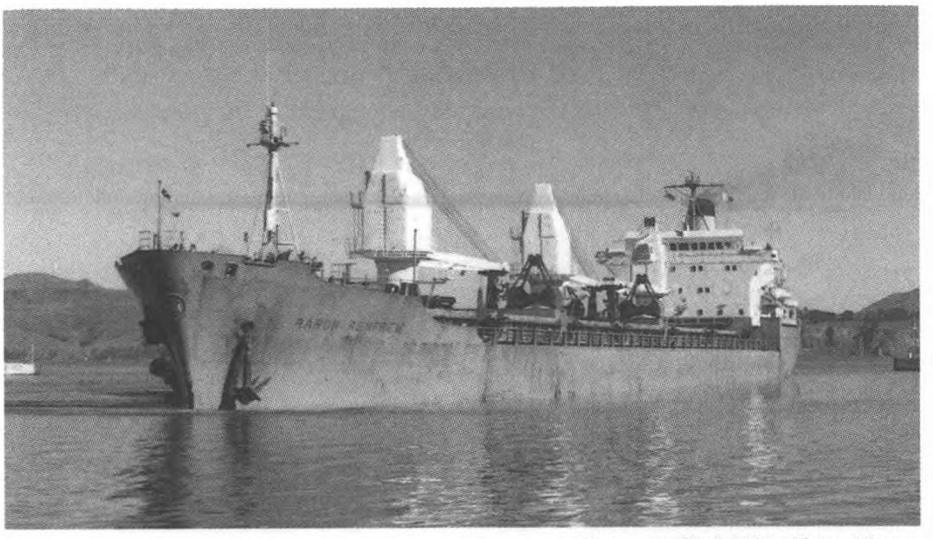
Opposite page 61



s.s. *Baron Fairlie* (1925), 6,706 gross



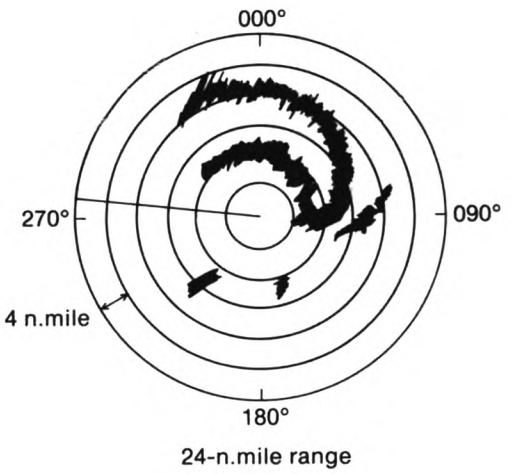
s.s. *Baron Inchcape* (1956), 5,490 gross

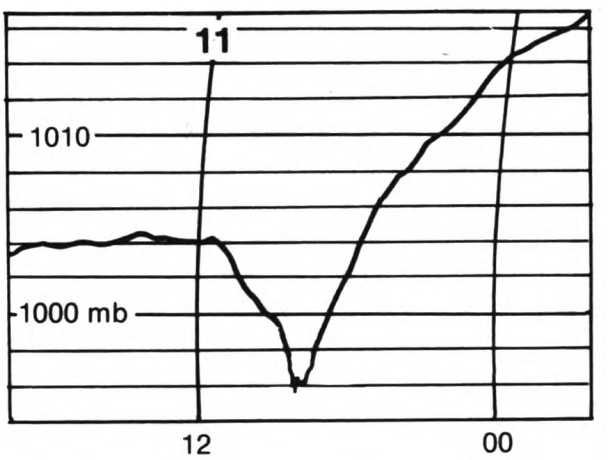


Photos by World Ship Photo Library

m.v. *Baron Renfrew* (1970), 13,544 gross

VESSELS OF LYLES AND HOGARTHS (See page 86.)





1630: Pressure 997.2 mb, rising. Wind backed to SW'ly, force 9. Cloud cover now 4 oktas cumulus, rain stopped. Heavy seas and heavy, confused swells. Course of ship 275°, speed 15 knots.

1645: Pressure 997.9 mb. Wind backed further to S×W'ly, force 8. Cloud cover now 1 okta cumulus. Heavy sea and confused swell.

1700: Pressure 998.9 mb. Wind S'ly, force 8. Cloud increased again to 8 oktas, vessel enters rain band with poor visibility. Heavy seas and heavy, confused swell.

1800: Pressure 1001.0 mb. Wind S'ly, force 9. Vessel in heavy rain and poor visibility. No change in state of sea and swell.

1900: Pressure 1005.5 mb. Wind S'ly, force 8.

2000: Pressure 1007.7 mb, continuing to rise. Wind S'ly, decreasing to force 7. Rough sea and heavy, confused swell.

2200: Pressure 1010.8 mb. Wind S'ly, decreasing further to force 5. Showers. Rough sea with moderate, confused swell.

At 0000 on the 12th the pressure was continuing to rise although the vessel was experiencing showers from cumulonimbus clouds. The wind remained generally from the south at force 7.

Position of ship at 1630 GMT: 39°08′S, 153°48′E.

Note. Mr R.D. Whyman comments:

'The charts for the area show a depression which was centred close to the position of *ACT6*. An associated trough would have crossed the region at about the time of this observation.'

SQUALL

Eastern North Atlantic

m.v. *Canterbury Star*. Captain J.M.-Harneis. Port Elizabeth to Antwerp. Observers: the Master, Mr P.J. Neve, 3rd Officer and ship's company.

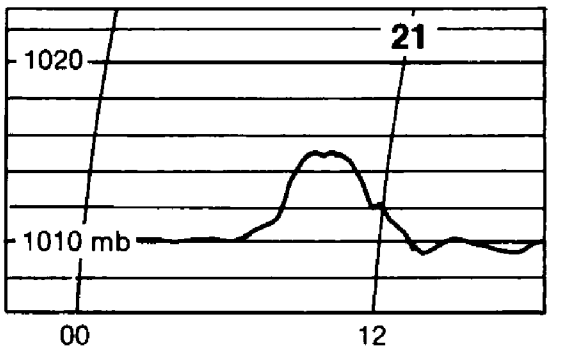
21 June 1988. During the morning an exceptionally violent squall was experienced. The weather had been fine with light winds (starting to tend from the north) and very little cloud cover; the pressure had varied by little over 1 mb in the previous 18 hours.

At 0800 GMT the Master observed some cloud development ahead of the vessel, it appeared to be passing clear on the prevailing WNW'ly wind. However, as the vessel approached, it became apparent both visually and on the radar that activity in the area was considerable and was developing rapidly. Sure enough, by 0815 the wind had veered rapidly to the north. The following sequence of events then occurred over the next hour or so:

0820: Wind continues to veer to ENE'ly, and increases to force 7. Pressure begins to rise rapidly. Moderate rain begins.

0840: Wind eases to ENE'ly, force 5; dry-bulb temperature noted to have fallen by 3–4 °C. Pressure continues to rise. Rain becomes torrential, blowing in sheets across the vessel and reducing visibility to less than 1 n.mile.

0900: Pressure reaches its maximum of 1015.0 mb having risen 4 mb since 0820, see barograph trace.



0920: Wind now ExN'ly, force 4. Rain easing considerably, visibility improving. Pressure (still around 1015 mb) begins to fall at this time.

1000: Wind begins to veer to S'ly, force 4. Rain now almost stopped, just an occasional passing shower encountered.

Over the next few hours the wind continued to veer towards the west then eventually to the north. Pressure continued to fall until about 1230 when it resumed a more 'gentle' variation. By this time the sky had also begun to clear.

Position of ship. 12°00'N, 18°00'W.

Note. Mr R.D. Whyman comments:

'The charts do not show any features to explain this observation. However, the description of events fits the following extract from the *Africa Pilot* very well.'

Another feature of the region S of about 20° N is the occurrence of "disturbance lines". These phenomena consist of lines of squalls somewhat similar to squally frontal troughs. They are sometimes described as tornadoes despite the absence of a whirlwind/vortex effect.

These disturbance lines, normally orientated N/S, move W at about 25 knots. The associated massive banks of cloud are usually accompanied by heavy rain and often thunder.

The barometer gives little or no warning of these features, although a rise in pressure of several mb occurs quite often with the onset of the squall.

Gusts of 50 knots have been reported at these squalls; the wind moderates relatively quickly but the rain may persist for a few hours.

These squalls, also called West African Storms. are most frequent at the beginning and end of the wet seasons (May and November).

CLOUDS

North Sea

m.v. *Seagair*. Captain F.B. Whammond. On station, Magnus oil field. Observer: Mr A.L. Zambon, 2nd Officer.

21 May 1988. At 0230 GMT a cloud having a steely-grey colour, being similar in form to stratocumulus and at a similar height but shaped like the head of a toadstool was first seen, created by the flare from the Murchison platform 18.7 n.mile away. The combustion products from the flare could be seen rising in

a semi-transparent column, until, at 3,000 feet, the column merged into the base of the artificial cloud directly above it; the cloud extended to an altitude of 4,200 feet as a cumuliform, whitish-coloured protrusion. This protrusion or 'head' was higher than the rest of the cloud which was spread out in a thick sheet with an apparent width of 10.4 n.mile bearing 137° from the ship.

This phenomenon had been observed before over other platforms south of the Magnus field, but had not been so well defined and clear of other clouds. At the time of observation, a similar effect was noticed at more distant fields, but no measurements were possible. The method used to determine altitudes for the cloud was by vertical sextant angle allowing for height of eye and the dip of the horizon. The cloud was visible until mid-morning when frontal activity produced natural cloud which obscured it. A photograph of the formation, taken at about 0615 is shown opposite page 60.

Weather conditions at 0600 were: air temperature 6.0 °C, wet bulb 3.1, pressure 1027.0 mb, wind NW'ly, variable. Natural cloud cover was 5 oktas of stratocumulus.

Position of ship: 61° 39′N, 01° 18′E.

Note. Mr R.D. Whyman comments:

'Observations made at Lerwick show that there was a temperature inversion at a level of about 2,700 feet under which the cloud could have formed.'

EXTREME AIR TEMPERATURE

Red Sea

m.v. *Benavon.* Captain D.D. Sutherland. At Jeddah. Observers: Mr A.R. Rendle, 1st Officer, Mr R. Smith, Deck Trainee and members of ship's company.

20 June 1988. During the day extreme air temperatures were recorded and the following observations were made during the vessel's period in port.

Time (GMT)	Wind		Temperature (° C)		Pressure (mb)
	Dir'n	Force	Air	Wet	
0100	N×W	3	29.7	5.6	1002.7
0500	NW	3	30.5	26.0	1003.2
0900	NE	3	45.0+	22.2	1003.4
1300	NW	3	34.3	26.5	1001.9

It was noted that at approximately 0700 the wind veered from NW'ly to NE'ly so blowing offshore as opposed to the earlier onshore observation. The air temperature promptly rocketed off the scale of the thermometer and could only be estimated at about 50 °C. The wet-bulb temperature dropped, indicating the very dry nature of the wind blowing off the desert in contrast to the breeze from the sea earlier. At approximately 1100 the phenomenon was reversed when the wind backed to NW'ly — much to the relief of all on board. The ship sailed at 1530.

Position of ship: 21° 28′N, 39° 11′E.

TIDE RIPS

Java Sea

m.v. *Ivybank*. Captain I.M. Maden. Darwin to Singapore. Observers: the Master and Mr G.R. Armstrong, 3rd Officer.

3 April 1988. At 0025 GMT it was noted in the ship's logbook that the prevailing wind of a strong force 4 and also a choppy sea had suddenly dropped to a light breeze and rippled sea, with signs of a second swell developing. There appeared to be no sudden change of wind direction, but the original swell of 170° was quickly being overruled by the developing second swell from 235°. At about 0030 disturbed seas were noted to the south-west at a range of 3 to 4 n.mile, stretching from aft of the port beam to a point away in the distance off the port bow, and along a clear-cut edge of a line moving towards the vessel from about 5½ points off the port bow.

The sky was generally clear, the water very deep (around a depth of 1,000 m) and the wind not strong, so when it was noted that there appeared to be bands of still water between rough patches, the Master was asked to take a look too.

During the following sixteen minutes, bands of very choppy, broken water clearly separated by bands of rippled sea moved past the ship until 0045 when their furthest north-westerly extent quickly dissolved into the previous 'force 4' seas. At no point throughout the observation did the wind speed change markedly (except at the very onset), but the sea state gave the appearance as follows: in the rough bands, which persisted for approximately two minutes, the sea was choppy with many 'white horses' as if there were winds of force 4 or 5, and the waves were up to 1 m high with an interval of 1 to 2 seconds. As they approached, the impression given was that they were passing over a reef, with the occasional wave rolling and breaking at the same time. The original swell from 170° was more predominant in the rough patches, but during the smoother periods, which lasted for two and a half to three minutes, the second swell from 235°, with a height of 1.5 m and period of 4 seconds was predominant, the first swell being hardly noticeable. The sea state in the smoother patches was that of a force 1 to 2 wind, also from 235°. At 0046 the sea and swell became very confused, but soon settled down with a SE×S'ly, force 3 wind blowing and with a swell from about 150°, height 1 m and period 4 seconds.

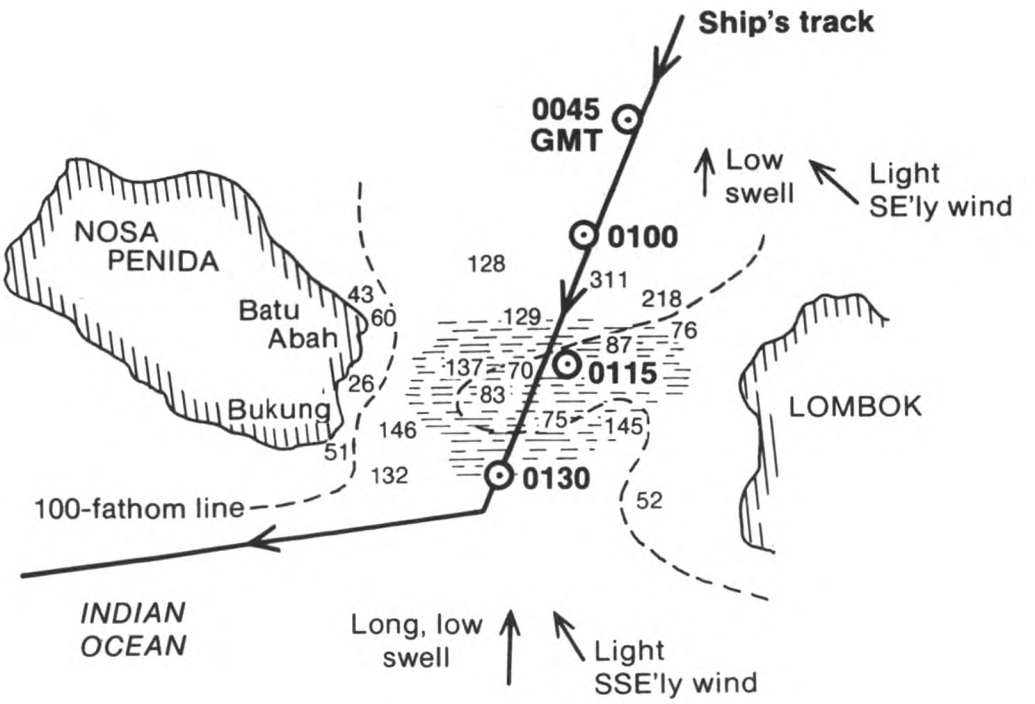
Position of ship: 07°42'S, 116°39'E.

Lombok Strait

m.v. *Tricula*. Captain I.A.M. Watt. Fukuyama to Richards Bay. Observers: the Master, Mr D. Barrow, 3rd Officer and members of ship's company.

1 June 1988. During the morning transit of the Lombok Strait, spectacular tide rips were observed.

As the vessel was approaching the last 10 n.mile of the southern part of the strait, a long, low southerly swell was beginning to run, and tide rips could be seen visually a few miles ahead accompanied by much interference showing on the radar. When the vessel was abeam of Batu Abah the seas became very steep and short, and also became extremely confused. A few minutes later, 'white horses' appeared, the sea remaining extremely confused. The sketch shows the extent of the phenomena observed. The tide rips gave the impression of numerous waves and swells coming from many directions.



During the period of observation the vessel experienced much vibration, pitching, rolling and yawing together with a brief, strong easterly set which was encountered at 0115 GMT. Once abeam of Bukung Light, the tide rips began to decrease and within minutes the sea was back to a long, low southerly swell accompanied by SSE'ly winds. The conditions preceding the observation had been calm seas and light, SE'ly winds.

Weather conditions were: dry bulb 28.0 °C, sea 29.0, pressure 1011.2 mb, skies partially cloudy.

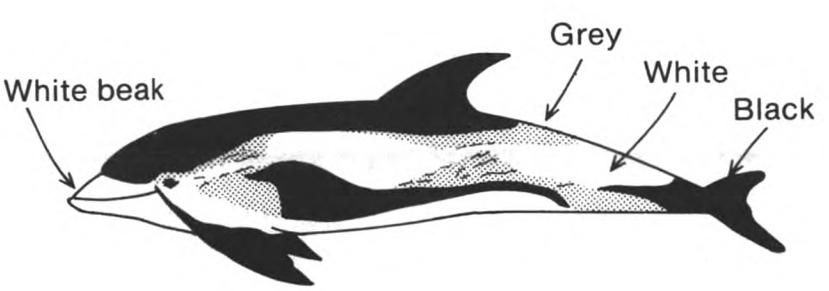
Position of ship: approximately 08°42′S, 115°36′E.

CETACEA

North Sea

m.v. *Matco Avon.* Captain P.D. Kelly. Hamburg to Scarborough. Observer: Mr I.J. Collins, 3rd Officer.

16 May 1988. At 0930 GMT several dolphins, thought to be White-beaked Dolphins, were observed. Numbering 10 to 12 adults in all, they were estimated to be 2 to 3 m long, with a short, white beak which was quite noticeable when they broke the surface. A sketch was made of one individual and shows the white beak plus other colouring noticed.



The dolphins appeared to be feeding or playing, and were concentrated into two groups of four or six individuals all showing vigorous activity. It was assumed that smaller food fish were present as large numbers of seagulls were circling the area. Showing no particular interest in the vessel, the dolphins maintained a distance from the ship of 45 to 60 m.

The weather at the time was fair and clear, the sea temperature was 10.2 °C and there was a slight sea with a low swell.

Position of ship: 54°07′N, 03°33′E.

Eastern North Atlantic

m.v. *Canterbury Star*. Captain J. M.-Harneis. Cristobal to Savona. Observers: Mr D. Stratford, 3rd Officer and Mrs Stratford.

10 April 1988. From the starboard bridge wing at 1630 GMT several dolphins were observed leaping and diving alongside the ship. After some ten minutes of playing in the waves, one of the larger members of the group appeared as if to dive below the hull of the ship. For some reason or other it mistimed the dive and looked as if it had actually hit the side of the ship. The observers looked down aft to see what had happened to it, and after about 30 seconds it was spotted floating upside-down with its white belly showing.

Whether it was just stunned or dead was not known. However, the other dolphins went to investigate the situation and began circling the still non-moving form. It was not expected that they would then slowly nudge the upturned dolphin along using their heads and continue to follow the ship. Obviously their speed was impaired and after a few minutes they were lost from sight owing to the speed of the ship.

The observers were left wondering if this behaviour was a normal thing for dolphins to do when a fellow member of the school is either injured or dead.

The weather at the time was cloudy, fine and clear, and there was a moderate sea and swell.

Position of ship: 34°56′N, 21°54′W.

Note. Mr D.A. McBrearty, of the Dolphin Survey Project, comments:

'This is an interesting report inasmuch as it demonstrates two very different aspects of cetacean behaviour. Firstly, it does show that, skilful and consummate performer that the dolphin undoubtedly is, it can and does occasionally get things terribly wrong and may injure or even kill itself in the process. These beautiful and remarkable animals are not infallible. Secondly, it shows the particular aspect of social organization known as "epimeletic behaviour". Epimeletic, or care-giving behaviour falls very simply into two categories, "nurturant' when the care is directed towards the young, and "succorant' when directed towards another animal which is showing distress. It is this latter example which has been witnessed on this occasion and is described by the observers. The realization that cetaceans offer assistance to one another in times of stress or difficulty is not new. There has been much discussion on the subject over the last 30 years, and historical records show that both nurturant and succorant behaviour in dolphins was noted in the work of Aristotle (fourth century B.C.).

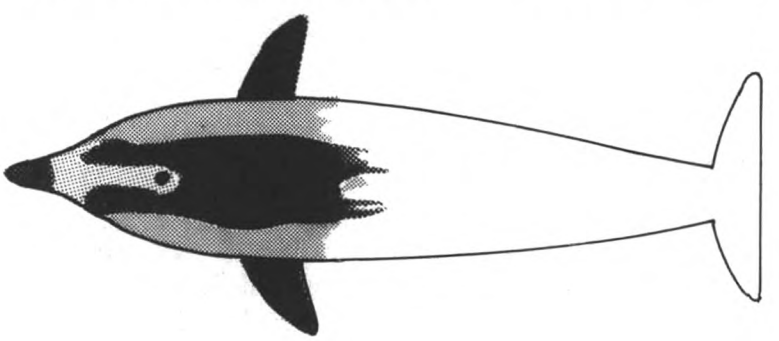
'In short, and in answer to the observers' question, yes, this is perfectly normal, and attendant dolphins would continue to give support to the injured companion by holding it at the surface in order for it to breath for as long as it takes to recover, or until the realization that it was dead.'

Eastern North Atlantic

R.R.S *Bransfield*. Captain S.J. Lawrence. Rio de Janeiro to Grimsby. Observers: Dr J. Pickup, Zoologist and Mr A. Sweetman, Met. Physicist.

5 May 1988. When just about to start a birdwatch observation, a dolphin was seen approaching the bow of the vessel, so the observers went to the bow and saw two dolphins bowriding fairly deep down.

Looking from above, the most obvious feature was a light-grey stripe from the blowhole to the base of the beak, as shown in the sketch. There was a light area on the side of the head, reaching above the eye, and the sides of the body were also pale grey. The upper part of the body was a medium to dark grey. The dolphins were about 2 m long, similar in size to a Common Dolphin, and they had medium length beaks, but the flippers were not so curved as in many dolphins.



After about 90 seconds of bowriding, most of which time had been taken for the observers to reach the bow, the dolphins veered off to starboard. They remained hard to see and swam fairly deeply, not rising far out of the water to breathe. Following a consultation with Lyall Watson's *Whales of the World*, they were identified as Helmet Dolphins.

Weather conditions at the time were: dry bulb 15.1 °C, sea 14.1, wind NE'ly, force 5.

Position of ship: 42° 54′N, 10° 30′W.

North Atlantic Ocean

Brigantine *Zebu*. Captain P. Masters. Tortola to Lisbon. Observers: the Master and members of ship's company.

24–26 June 1988. The following is a summary of observations made between the above dates.

24 June. A pod of approximately 14 Sperm Whales was observed basking on the surface. The ship approached, and when near, the engine was put into neutral to enable the ship to coast through the pod, and occasionally, the engine was engaged to maintain contact with it. The whales were seemingly unperturbed by the presence of the ship. Some would submerge towards the *Zebu* to within 27 to 36 m. The pod included a calf which was some 3 to 5 m long and which 'tail-slapped' towards an adult, sticking to its side throughout. After half an hour, the ship continued on its way.

Also seen on this day were approximately 12 Longfin Pilot Whales and seven to ten Bottlenose Dolphins mixed together. The whales seemed uninterested whereas the dolphins approached the vessel; these also indulged in some tail-slapping. Later on, a total of about 15 Spotted Dolphins were seen.

25 June. About a dozen Sperm Whales in two groups with 12 to 15 Bottlenose Dolphins were seen. The first pod of whales consisted of three adults in a tight group and facing in different directions. Amongst them were two small calves (about 3 m long) seemingly supported by the adults. The dolphins were around the group and exhibited tail-slapping behaviour. The whales moved away on approach of the vessel and submerged. However, more Sperm Whales were seen approaching and they cruised parallel to the ship's course at a distance of about 30 m. The ship passed within 6 m of a couple of individuals and a change of course was necessary in order to avoid a collision. Tail flukes were shown by some whales upon sounding. About five Bottlenose Dolphins were also seen on this day.

26 June. Five Sperm Whales were seen in a small group basking on the surface and spread out over about 2 n.mile.

Position of ship on 24 June: 40° 30′N, 42° 48′W.

Position of ship on 26 June: 40° 36′N, 39° 12′W.

Note. Mr D.A.McBrearty comments:

'This is a most comprehensive list of observations. The observers have identified four different species including the largest of all toothed whales — the Sperm Whale (*Physeter catodon*) and one of the two species of spotted dolphin that are found in the North Atlantic Ocean. This is the Atlantic Spotted Dolphin (*Stenella frontalis*), generally the more northerly, robust and heavily spotted of the two. Altogether, the observers have had an interesting and successful voyage.'

FISH

Eastern North Atlantic

m.v. *British Ranger*. Captain D.M. Phillips. Persian Gulf to Rotterdam. Observers: Mr W.A.J. Cameron, 2nd Officer and Mr M. Bicknell, Catering Officer.

25 May 1988. Whilst the ship was drifting and awaiting orders a small fish, somewhat dried out by the sun was found on the fo'c'sle. Having the appearance of an inhabitant of deep water, the observers thought it strange that it was found

on board. The fish appeared to have either a swollen tongue or some other obstruction in its mouth, but no attempt was made to remove it as the specimen was in a very fragile state.

As to how it came to be on board, the vessel had last experienced seas on deck on 28 April whilst rounding the Cape of Good Hope.

Position of ship: 34° 12′N, 10° 20′W.

Note 1. Dr F. Evans, of the Dove Marine Laboratory, University of Newcastle upon Tyne, comments:

'This 5-cm fish, which was dried to leather of course, still retained enough detail to allow its identification as a stomiatoid. These are deep-water fish which migrate upwards at night, occasionally reaching the surface. They are supplied with luminescent organs along the side and sometimes have a sort of lure under the chin. This is used in much the same way as the light lures of a deep-sea angler fish. The teeth are those of a predator, and if these were not sufficient identification of its carnivorous nature, the "swollen tongue" in its mouth revealed itself under the microscope to be the head of another fish, half swallowed.'

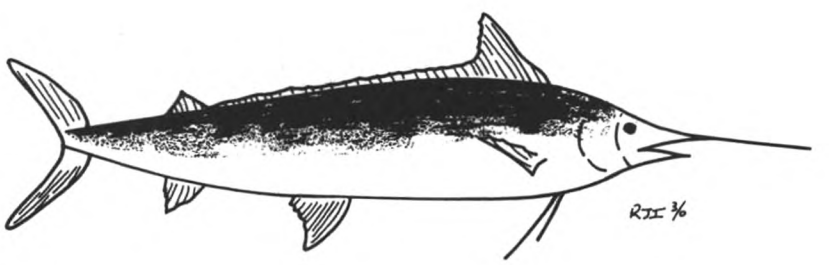
Note 2. A photograph of the fish, taken by Dr Evans, is shown opposite page 60.

North Atlantic Ocean

m.v. *Ravenscraig*. Captain F. Stuart. Saldanha Bay to Port Talbot. Observers: Mr I. Buckley, 2nd Officer, Mr R.J.Inge, 3rd Officer and Mr F. Burnett, Extra 2nd Officer.

5 June 1988. At approximately 1715 GMT whilst the observers were waiting for the barbecue to heat up, there was a sudden shout from the Second Officer to 'Look at that!'; and there, probably about 10 m from the stern of the ship was this beautiful, brightly-coloured fish jumping about and spinning, perhaps ridding itself of parasites.

It was about 1.2 m in length with a small, cylindrical body and a 'spear' of about 30 cm in length as shown in the sketch. In colour the fish was a really light blue on top with silver underneath. At first it was thought to be a swordfish, but with reference to *The Seafarer's Guide to Marine Life* by Paul V. Horsman, it was found to be a marlin.



It was a beautiful sight to see, and was probably the only time one would ever be seen so close. Unfortunately, a camera was not to hand but the fish was near enough for an excellent picture.

Weather conditions at the time were: air temperature 27.5 °C, wet bulb 25.2, sea 29.2, pressure 1014.6 mb, light and variable winds.

Position of ship: 10° 00′N, 16° 50′W.

BIRD

Red Sea

m.v. *Osaka Bay*. Captain J.K. Blackburn. Jeddah to Singapore. Observers: the Master and ship's company.

2–3 May 1988. At 1020 GMT a pelican was spotted flying around the vessel. It eventually landed in the swimming pool where it paddled/swam for some time, see photograph opposite page 70. Following his swim he launched himself into flight and proceeded to the gantry of the stores crane where he settled for the evening. He remained there until 1900 when a gust of wind caused him to lose his balance. After circling the vessel several times, the bird finally settled on the taffrail of the starboard bridge wing where he stayed until daylight.

The pelican stood approximately 1 m high; the upper parts of the wings were a mottled light and dark brown colour and the bill was very pale pink. Its body was light grey or light brown in colour and the legs and feet were yellowish. With reference to *Seabirds, an identification guide* by Peter Harrison, the bird was believed to have been an immature Pink-backed Pelican.

During the morning of the next day, the bird made numerous attempts to take off, but owing to the strong wind across the deck he was unable to do so. A bucket of fresh water had been provided but the pelican had taken no interest in it; a piece of cod had also been offered, but once again no interest was shown.

At 0800 the pelican took off and flew with the wind in a north-westerly direction.

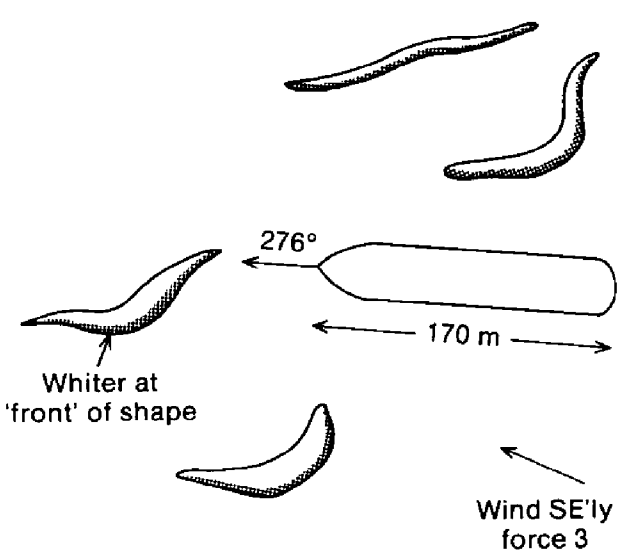
Position of ship on 2 May: 20°21′N, 39°00′E.

BIOLUMINESCENCE

North Atlantic Ocean

m.v. *Etrema*. Captain R. Firth. Madras to Corpus Christi. Observer: Mr J.B. Wilson, 3rd Officer.

17 May 1988. At 2245 GMT the vessel was approximately 40 n.mile east of San Miguel in the Azores when 'white water' was first seen in large shapes as shown in the sketch. They resembled the wake of a ship but there was no change in the state



of the sea surface. An Aldis lamp was shone onto the shapes but this had no effect in increasing their luminescence. At no time was their colour green; however, they did appear a more intense white at their 'fronts'. A constant stream of shapes passed with a period of half a minute to one minute between them. Occasionally, a longer shape appeared and was about 1 m wide. In all, the phenomenon lasted for about 15 minutes.

Weather conditions at the time were: air temperature 16.7 °C, wet bulb 16.0, sea 17.0, wind SE'ly, force 3. The sea was slight and there was a low/moderate swell of average length. It was a dry, clear night with 2 oktas of cloud cover.

Position of ship: 37° 34'N, 24° 22'W.

Note. Dr P.J. Herring, of the Institute of Oceanographic Sciences, comments:

'These patches were caused by aggregations of krill (euphausiid shrimps). They produce very characteristic milky-white luminescent patches with a brighter edge, just as described, and are frequently encountered in this region of the eastern North Atlantic. I have seen this a little farther east where there were also unusual numbers of Fin Whales, probably feeding on the krill. The shrimp (*Meganyctiphanes norvegica*) is the species most likely to have been involved.'

Arabian Sea

m.v. *Blue Excelsior*. Captain D. Hannah. Singapore to Yenbo. Observer: Mr S.A. Crow, 2nd Officer.

19 June 1988. On this evening at about 2054 GMT, flashes of light were observed to the north and west of the ship. Such was the intensity of the lights that they might, but for their short duration, have been mistaken for the loom of deck working lights on fishing boats. By 2130 the lights were much closer and it became obvious that some form of bioluminescence was the cause.

Two of these flashes occurred directly alongside the ship, and so allowed reasonably accurate observation. Each began as a circle of light of rapidly increasing intensity and about 3 to 4 m in diameter. Once the circles had reached their maximum intensity they began to expand, reaching a diameter of 30 to 40 m before fading. This cycle took some 15 to 20 seconds to complete. As has previously been stated, the light emitted was extraordinarily intense; the two flashes alongside both clearly illuminated the ship's structure.

By 2200 the last few lights were seen astern and to the east, suggesting that the bioluminescence was confined to a small area. Throughout, flashes occurred with a frequency of perhaps one per minute. The echo sounder was operated intermittently but had no noticeable effect on the lights.

Position of ship: 10° 30'N, 63° 52'E.

Note. Dr P.J. Herring comments:

'This report is a very clear account of the 'expanding' or 'exploding' patch phenomenon. The cause of this has been ascribed either to seismic activity in the sea bed or to the expansion of a dense shoal of small fish or shrimp. This particular account supports the latter interpretation as the rate of expansion (about 1 metre per second) is more appropriate to a fast-swimming animal than to a seismic shock wave. Even if this interpretation is correct, it is not the swimmers themselves that produce the luminescence, but the turbulence they cause that stimulates small organisms such as dinoflagellates or ostracods to produce the overall glow.'

RADAR DUCTING

Western North Atlantic

m.v. *Sky Clipper*. Captain G.P.D. Coleridge. St John, N.B. to Tela. Observers: the Master, Mr N.P. Colling, Chief Officer, Mr Z.D. Antia, 2nd Officer and Mr P. Rishi, 3rd Officer.

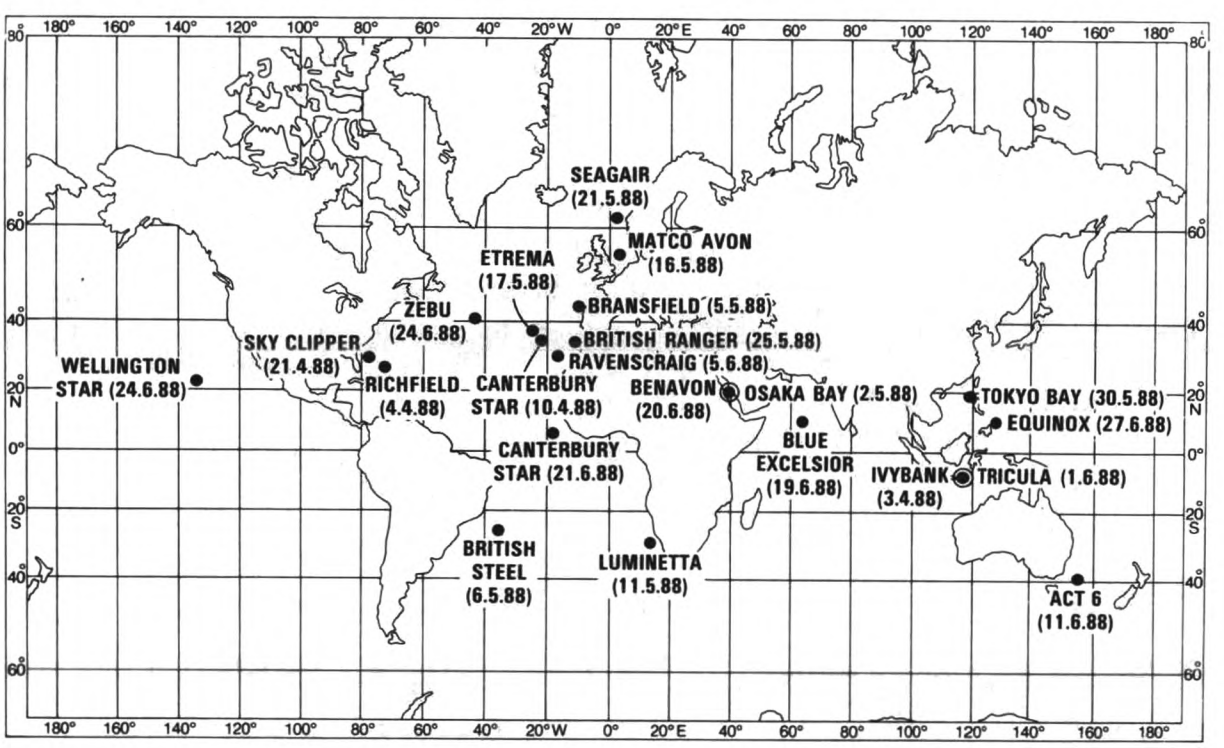
21/22 April 1988. While the vessel was about 150 n.mile north of the Bahamas, the phenomena of super-refraction of radio waves was observed all through the night from about 1900 GMT to 0400 GMT.

A very distorted image of land was picked up on the radar (Furuno, Model 1011) on a range of 48 n.mile, showing land at about 35 n.mile off. The echo was also observed on the 72-n.mile range, and later on, on smaller range scales, the distance off reducing with time in congruence with the ship's speed. With bearings agreeing with those on the chart, the image was identified as that of Cape Canaveral in Florida which was actually about 140 n.mile off. This radar picture remained on the screen at various range scales on the above mentioned radar set and on the vessel's second set (Radiolocator 16) for the next three to four hours. After that, no abnormal phemonena on either of the radar sets were observed.

FM radio reception of distant stations was exceptional until the next morning — very good reception of stations as far as New Orleans and Baton Rouge could be received until the vessel was about 20 n.mile south-west of Cape San Antonio, Cuba. Reception on VHF was similarly exceptional.

Weather conditions were: air temperature 23.5 °C, wet bulb 21.0, sea 21.2, wind SW×S'ly, force 3. Visibility 11 to 20 km, cloud cover 3 oktas.

Position of ship: 29° 15'N, 78° 07'W.



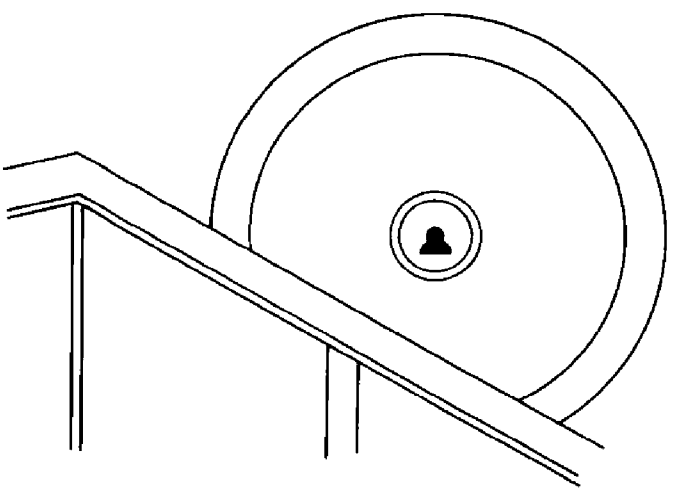
Position of ships whose reports appear in *The Marine Observers' Log.*

BROCKEN SPECTRE

South African Waters

m.v. *Luminetta*. Captain J.Hart. Durban to Walvis Bay. Observers: Mr D.S. Hughan, Chief Officer and Mr I.J. McMahon, 3rd Officer.

11 May 1988. At approximately 0700 GMT the ship encountered fog with visibility reduced to about 100 m and the sky not visible. At 0730 the fog thinned and the visibility improved to 200 m from 170 m as a cloudless sky became discernible. The fog extended upwards from the bridge for an estimated 7 m (the height of the bridge above sea level being 15 m) and, upon looking over the port bridge wing down towards the sea, a shadow of the observers' heads and shoulders was seen with a full circle aurora containing clearly the light spectrum being cast just above the water's surface and around the shadow, see sketch. Also,



further out from the centre another full circle of the spectrum was seen with colours still clearly visible, but unfortunately, it was interrupted by the taffrail.

This phenomenon persisted for about 20 minutes until the fog started to clear. Patchy fog was then encountered for the next few hours, but no such effects as described were observed again.

At the time of observation the air temperature was 17.1 °C, wet bulb 16.9, sea 17.0, wind SW'ly, force 2–3. The sun's bearing was approximately 030°, elevation about 40°.

Position of ship: 28°10'S, 15°25'E.

Note. The *Marine Observer's Handbook* states:

In a foggy atmosphere an observer, standing with his back to the sun, when this is at a low altitude, will sometimes see the shadow of himself, or of his head, thrown upon the fog, together with coloured rings of light surrounding the shadow. The phenomenon was first noted on the Brocken mountain in Germany but it is not confined to mountain districts and it is most common in Arctic regions, where it is seen on every occasion of simultaneous sunshine and fog.

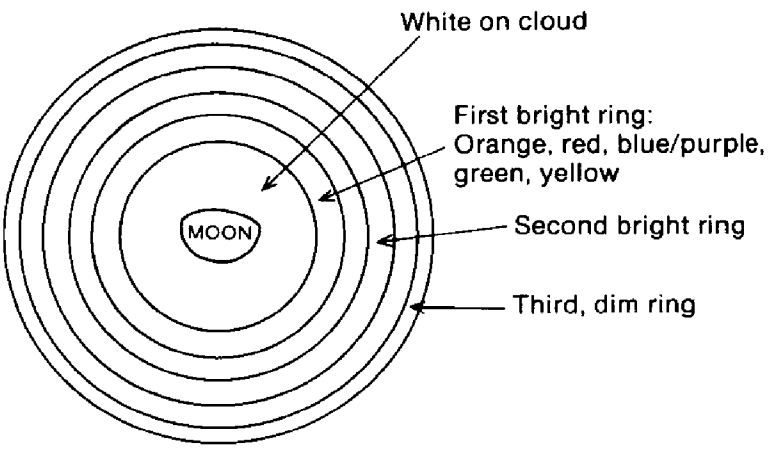
The coloured rings are now usually known as a 'glory'. A typical series of colours seen in a well-developed one is as follows. There is a general whitish-yellow colour round the shadow, surrounded with rings of colour in order outwards: dull red, bluish-green, reddish-violet, blue, green, red, green, red. A white rainbow at a considerable distance outside the glory is sometimes also seen.

CORONA

South Atlantic Ocean

m.v. *British Steel.* Captain P. Creber. Hunterston to Tubarao. Observers: Mr P.V. Marshall, 3rd Officer and Mr D.Robinson, Lookout.

6 May 1988. At 0221 GMT three concentric rings of colour were observed around the moon as shown in the sketch. The sequence of rings and colours were



as follows. A bright white light was seen around the moon and this was followed by a ring of bright colours in the order from the inside of orange, red, blue/purple, green and then yellow. There was then a small gap before a second bright ring bearing colours identical to the first one. A similar gap came next and then a third, more faint ring again of the same colours was seen.

Up to the time when the cloud cover (1 or 2 oktas of altocumulus) moved away from the moon, the width of the whole display spanned the distance between two fingers held in 'Churchillian salute' at arm's length. The phenomenon was very striking indeed and persisted for some 10 minutes.

Position of ship: 15°43′S, 36°04′W.

Note. Dr R. White, of the Institute for Research in Meteorological Optics, comments:

'This is an interesting multiple lunar corona, the rough measurement suggesting a droplet diameter of about 40 microns (that is if "width" is meant for diameter; the droplet diameter would be halved if the radius of the corona is meant). One or two features puzzle me though. I am rather mystified by the "gaps" referred to. I would be inclined to interpret this term as referring to dark, rather than merely colourless zones, but the theory would not seem to predict either at the points in the sequence of colours mentioned; nor should it be possible to observe the full sequence of colours in the outermost "dim" ring.'

UNIDENTIFIED OPTICAL PHENOMENON

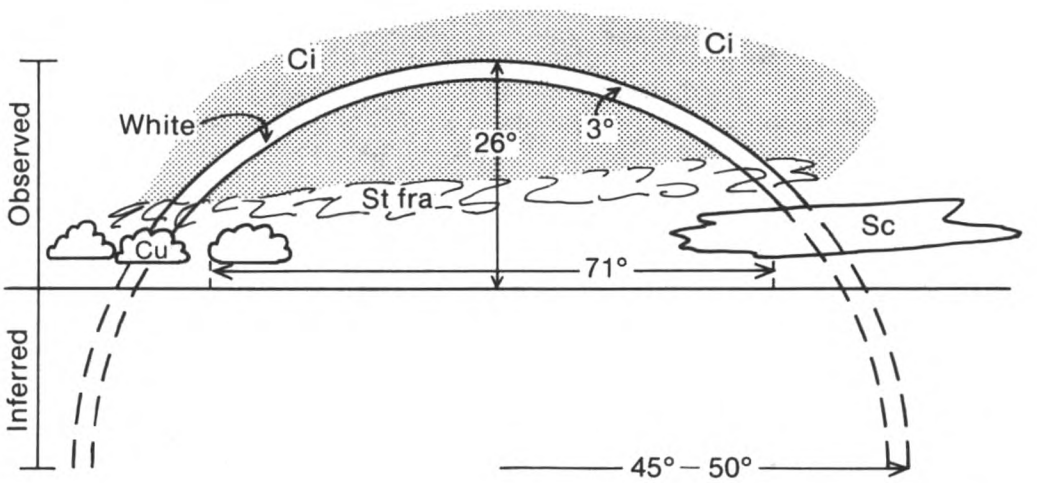
North Pacific Ocean

m.v. *Wellington Star.* Captain T.C. Black. Los Angeles to Pago Pago. Observers: Mr A. Tibbot, Chief Officer, Mr M.N. Mace, 3rd Officer and members of ship's company.

24 June 1988. At 0227 GMT a 'bow' was seen on the port side of the vessel in a

direction opposite to the sun. It appeared to be formed upon cirrus cloud which was present in filaments, and could only be seen where the cloud was in evidence.

The bow was generally white (the colour of the cloud screen) but had a red/brown tinge to its outer edge, much like a halo; no other coloration was visible anywhere. It was quite bright but had very indistinct edges. The brightest part was at the highest point; elsewhere it was dimmed by, but did not disappear in, patches of thin stratus fractus further down towards the horizon, see sketch.



Bearings of the wider part of the visible bow gave an angle of 71°, and a sextant altitude of the top of the bow gave 26°; the bow was about 3° wide. There was no visible precipitation in the direction of the phenomenon during the observation.

The bow lasted for about 20 minutes before becoming temporarily obscured by cloud passing between it and the observers, but once the cloud had passed it reappeared for another 15 minutes before finally being hidden. At the time of observation the sun was behind altostratus, but its position was clear enough to allow an approximate altitude of 14° (to the nearest 30′) to be obtained.

Assuming the phenomenon was part of a large, circular bow, it was calculated that the radius of the whole would have been between 45° and 50°. No mention of a bow like this could be found in the *Marine Observer's Handbook*, the closest comparison being the halo of 46°. It was obviously not a halo though, as the sun was in the opposite direction to it. A fog-bow or Ulloa's Ring was also ruled out because the only cloud that it could have formed in (stratus fractus) was not visible where the bow was brightest. One possibility considered was that it was formed by reflection and refraction in ice crystals in the cirrus cloud.

Position of ship: 22°00′N, 134°30′W.

Note 1. Dr R. White comments:

'The measurements quoted (26° and 14°) suggest that if the feature was circular about the antisolar point, its radius was rather nearer 40° than 45°–50°. The two possibilities which give red on the outside (i.e. remotest from the antisolar point) are a cloudbow (a rainbow due to small droplets) and an antisolar halo of 38° (there is also an antisolar halo of 46° theoretically possible, but it has red on the wrong side).

'Of the two possibilities, I think I must go for the cloudbow. The antisolar halo of 38° would be exceedingly faint, and I am not at all sure that it has ever been observed. I am aware of the difficulty to which the observers allude concerning the cloudbow (Ulloa's Ring or fog-bow) interpretation, but I would refer to known instances of rain from a clear sky and query whether the "cirrus filaments" might not after all have been some droplet cloud.'

Note 2. Dr White has also offered some general points to observers of halo phenomena:

'Firstly, and this goes for other phenomena as well, be careful only to report what is actually visible, not anything else that it is inferred ought to be there. Secondly, be aware that halo phenomena can be seen in parts of the sky quite remote from the sun or moon.

'Thirdly, I would perhaps stress that solar haloes are brighter, more spectacular and more frequent than lunar. The former may be more difficult to pick out because of the solar glare, but I have found a clenched fist held out at arm's length in combination with suitable dark glasses quite effective. It may be, however, that some people's eyes are more sensitive to glare than others.

'I am not aware of anyone having suffered eye damage in such observation, though of course due care should be exercised, and it is probably best to adapt gradually to this activity, each observer finding out how near to the sun he can look with the fist/dark glasses precautions. I have heard allegations that some dark glasses do not give full protection against invisible, harmful rays, but I have no evidence that anyone has been injured by observing the solar haloes, even by persistently doing so in the long term. I can imagine that it could sometimes be undesirable for observers to be even temporarily dazzled if they are required to keep a lookout for approaching vessels as well. With these caveats, I would urge that a more determined watch for solar haloes be kept.

'One or two more points. Observers should record what they measure as the radius of the halo. Is it the radial distance in arc to where the halo is brightest, or to the sharp, inner edge or what? It might be worth checking circularity by measuring radius in more than direction if possible. An observer who has the good fortune to see one of the rarer halo complexes in which phenomena extend over the whole sky should visualise the geometry in terms of the celestial sphere, and draw the complex accordingly. But this should be more obvious anyway to mariners, with the clear horizons, than to landsmen.

'I hope these comments are constructive and helpful.'

METEORITE

Western North Atlantic

m.v. *Richfield.* Captain J. Lord. Middlesbrough to Mobile. Observers: Mr T.P. Gunanayagan, 3rd Officer, Mr T.Adrian, Radio Officer, Mr L. de Silva, 4th Engineer Officer and Mr Kwok Lai Lok, A.B.

4th April 1988. At 0140 GMT a large meteorite about half the apparent size of the moon overtook the ship, passing approximately 1.5 n.mile away. The illumination it produced lit up even the inside to the bridge.

Owing to the bright moon (almost full) the meteorite was first noticed about 3½points on the port quarter when a faint 'whoosh' sound was heard. Within 3 seconds the meteorite travelled the distance from (a) to (b) as indicated in the sketch (although it did not travel very fast), making the 'whoosh' sound similar to a sky rocket, it then petered out similarly with a small explosion.

Opposite page 76

m.v. *Cape Wrath* (1940), 4,512 gross

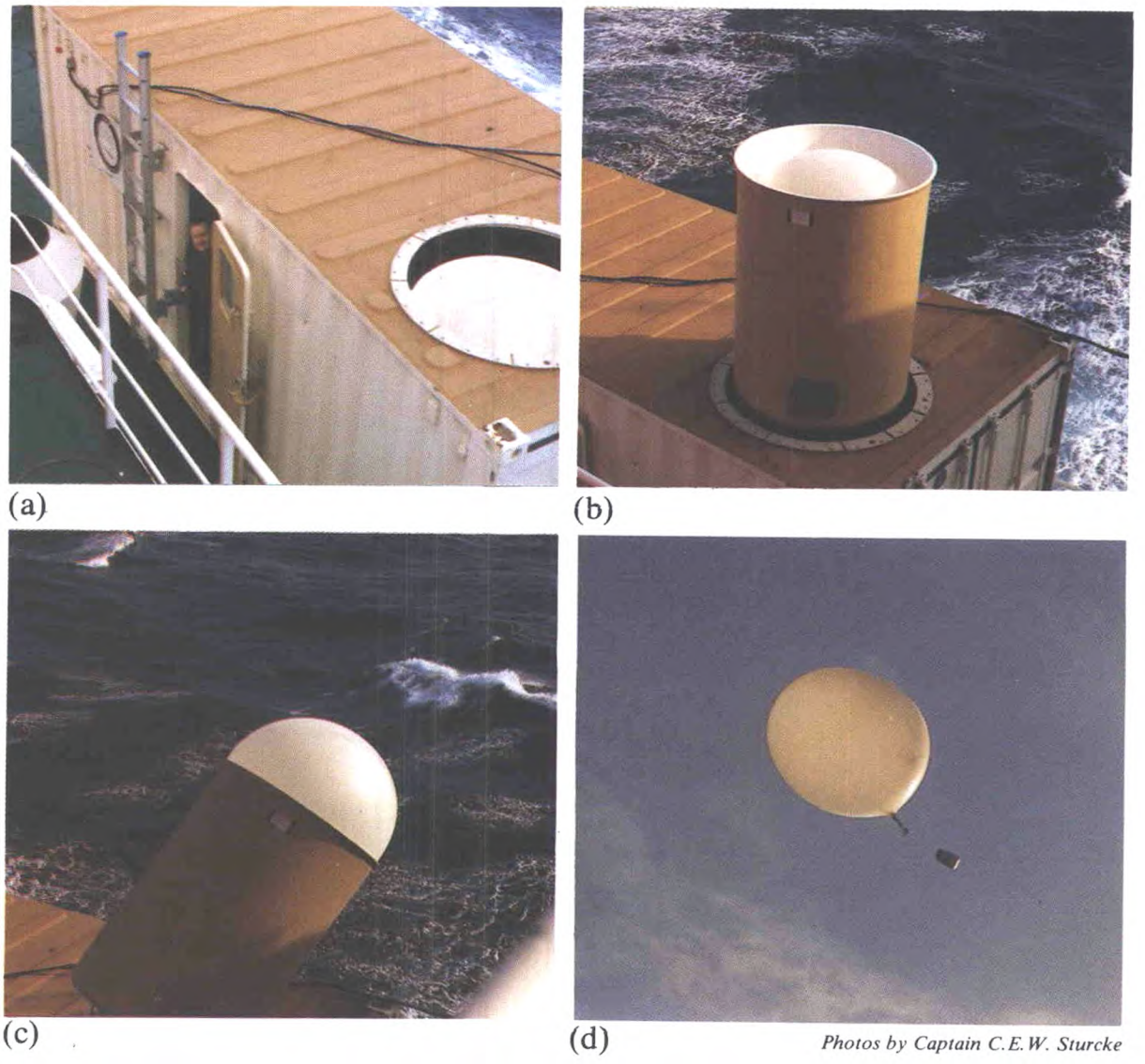
m.v. *Cape Horn* (1957), 8,484 gross

Photos by World Ship Photo Library

s.s. *Cape Grenville* (1973), 14,000 gross

VESSELS OF LYLES AND HOGARTHS (See page 86.)

Opposite page 77



(a) (b) (c) (d)

Photos by Captain C.E.W. Sturcke

ASAP radiosonde launch sequence. (See page 79.)

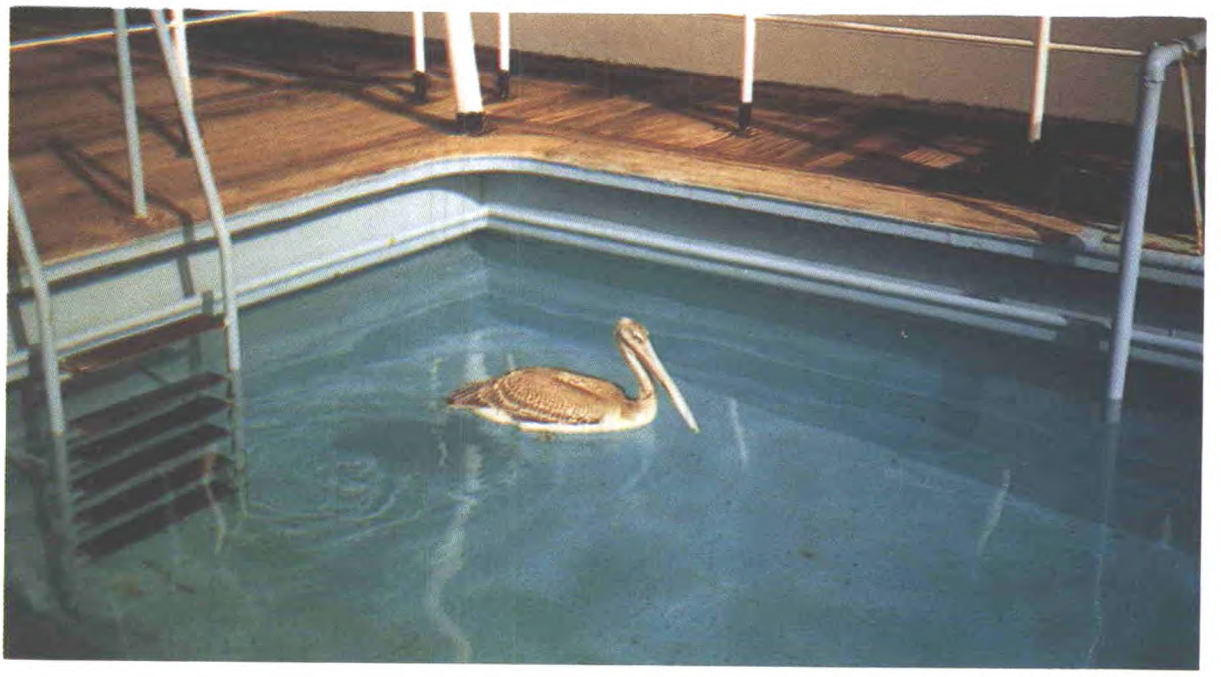
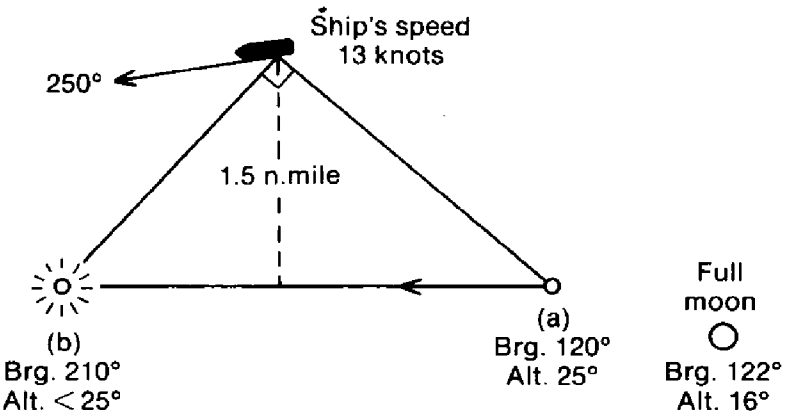


Photo. by C. Henderson

Pink-backed Pelican on board m.v. *Osaka Bay*. (See page 70.)



The object was not seen to hit the sea surface and no other meteorite activity was observed. At the time the wind was E'ly, force 3 and the cloud cover was less than 1 okta of small cumulus on the horizon.

Position of ship: 27°04'N, 72°38'W.

Note. Mr H. Miles, Director of the Artificial Satellite Section, British Astronomical Association, comments:

'This was a fireball produced by a natural object. The apparent nearness was an optical illusion quite common in this type of observation. Of interest is the report of noise from the transit. Noise is reported from time to time but no satisfactory explanation can be put forward for many of the cases. For a full investigation of such phenomena, precise data is required.'

551.507.2:551.501.7:551.508.825:621.396.91

The Automated Shipboard Aerological Programme

By M. Hatch
(Meteorological Office, Bracknell)

Taedet caeli convexa tueri [Weary of gazing at the heavenly vault]

From the *Aeneid*, Book IV
By Virgil

The international ASAP project with special reference to the United Kingdom Meteorological Office participation up to June 1988.

National weather services continuously monitor the Earth's atmosphere, providing forecasts and other weather information to a wide variety of user groups. The sources of meteorological data range from sophisticated observing systems such as satellites and automatic weather stations, to observations provided by volunteers using the simplest of instruments, with data representing conditions at the Earth's surface, over the oceans and at various levels in the atmosphere.

The largest data-sparse area remains the 70 per cent of the Earth's surface covered by ocean and, in particular, weather data collected by sounding the upper levels of the atmosphere. These are normally sounded by use of a balloon-borne 'radiosonde', an instrument which samples the atmosphere as it is carried aloft as the payload of a balloon filled with either helium or hydrogen gas.

The meteorological parameters usually monitored are pressure, temperature and humidity, with the pressure element providing a reference point. As the altitude of a pressure level above the Earth's surface is dependent upon the temperature of the air below it, its height can be calculated. With the additional information provided by tracking the balloon and its time of flight, a comprehensive picture of the atmosphere through which the balloon passes can be made.

The radiosonde transmits a radio signal to the ground receiving station, the signal being modified by the reaction of the sensors in the instrument to the changing meteorological parameters.

Traditionally, upper-air soundings over oceanic regions were a main function of the Ocean Weather Ship services, but the rising costs associated with the operation of these dedicated vessels led to a severe curtailment of their former network. On these purpose-developed ships there was space for large-scale meteorological equipment such as radar, dedicated radio frequencies, telex-over-radio and balloon-launching areas as well as the staff needed to operate and maintain the equipment.

The superseding of balloon-locating radar by Navaid signals to track the radiosondes, and the development of Data Collection Platforms (DCPs), enabled the upper-air information to be automatically transmitted ashore and into the Global Telecommunications System (GTS) using the GOES geostationary satellite system, and laid the groundwork for the development of what has become known as ASAP.

The Canadian Atmospheric Environment Service (AES), which kindly gave permission to quote extensively from its ASAP manual in this article, was much

involved with the prototype ASAP, and the first U.K. participation in the North Atlantic took place during the second half of 1984, when a Canadian 20-ft ASAP container was carried on the then CP Ships' *CP Ambassador* [now *CanMar Ambassador*] for trials. These trials were completely successful and were followed in early 1987 by a Finnish Meteorological Institute operational ASAP on the same ship.

The ASAP system basically operates in the following manner. A modified ISO 20-ft container, secured to the deck of a merchant ship, houses the equipment required to launch and track radiosondes, and a DCP which transmits the results to a nominated satellite receiving station on a pre-set frequency and time schedule. The radiosonde is equipped with a high quality aneroid capsule which has capacitive elements installed within its vacuum chamber. Pressure changes are translated into calibrated variations of capacitance which are converted into pressure values on receipt by the ground station. Temperature and humidity sensors transmit capacitance variations to the ground station for conversion into absolute values.

For windfinding, the world-wide Omega navigation stations are utilised, together with the Russian Sigma network. The sonde receives these VLF Navaid signals and retransmits them on 403 mHz together with the pressure, temperature and humidity modulations; an Omega processor and computer at the ground station, i.e. in the ASAP container, then evaluates the wind directions and speeds from the changes in calculated positions of the sonde. The ground-station computer evaluates the temperature, humidity and wind at successive pressure levels, building up a profile of the region through which the sonde has travelled. As there is a world-wide network of radiosonde stations releasing balloons at the same times each day, the result is a vertical profile of the atmosphere through 90 to 99 per cent of its depth, thus providing a three-dimensional picture that is combined with other meteorological observations to produce a more complete coverage of the synoptic situation. A sequence of photographs taken during the launch of an ASAP radiosonde is shown opposite page 77.

When the balloon reaches approximately 22 km in height it bursts, the ground equipment recognises the burst by the reversal in pressure tendency, and terminates the sounding; the computer then completes the processing of the data by computing the standard and significant pressure and wind levels, and generates a SHIPTEMP message in standard WMO international code. This message is transferred to a microcomputer, placed in the memory then transmitted to the shore via the GOES satellite by means of a 40-watt transmitter and omni-directional antenna. One of the receiving stations is at Darmstadt, West Germany, where the ASAP message is re-formatted for input into the GTS.

The ASAP system has been designed with the following conceptual requirements in mind:

(a) Compatibility with the operation of merchant ships, whilst they carry out their normal functions.
(b) Minimal impact on ship's operations, or demand on ship's facilities.
(c) Conforming to the general standard required to provide upper-air data.
(d) Using onboard data-processing systems to produce radiosonde data formatted in the appropriate World Meteorological Organisation (WMO) code for exchange on the GTS.
(e) Employing satellite communications for data transfer.

As will be seen later in this article, some of these concepts proved rather elusive in the early voyages.

The system has been designed to take advantage of the latest developments in computer technology, radiosonde techniques and meteorological satellite communication systems; as a result the design concepts emphasise the following elements:

Automation

(1) To have the minimum of shipboard operatives involved.
(2) To provide high quality and consistent data.

Efficient engineering design

(1) To maintain a high degree of operational reliability in adverse sea and weather conditions.
(2) To adapt to advances in technology by using modular construction.
(3) To provide for a high degree of operator safety and efficiency.
(4) To make efficient use of space on board ship.
(5) To reduce demand on ship's facilities.

The above features serve to conform to ship safety standards and to cost-effective radiosonde equipment to meet the data requirements, at the same time reducing the cost of expendables.

The following description of the setting up of the U.K. operation is based on personal experiences and on discussions with feilow operators Messrs G. Allen and D. Hampton, and with Captain G.V. Mackie, Marine Superintendent of the Met. Office.

The author's introduction to ASAP was to sail on the *CanMar Ambassador* in May 1987 and to be instructed in the use of Digicora, the radiosonde ground equipment of the Vaisala Company of Finland; it was a pleasant voyage being instructed by Mr Nietosvaara, a third-year student of meteorology, who was the operator on that voyage. Unfortunately, the equipment worked perfectly throughout the voyage which did nothing to prepare one for the problems to come.

After this voyage there was a period of uncertainty whilst suitable ships were sought; several ships were considered, with many rejections for a variety of reasons. Finally the *Manchester Challenge* was visited, accepted, and in a day of action the 20-ft Canadian ASAP container on loan was located in Felixstowe and secured on board the ship; she sailed on the coastal voyage early the next morning for Hamburg and Antwerp, returning to Felixstowe five days later. The container was then powered up, stored and tested and a successful balloon launch carried out.

The ship sailed for Le Havre and Montreal the following morning and had only passed a little beyond longitude 10° West before disaster struck. However, the problems proved not to be too serious and on checking in one of the dozen instruction manuals available the helpful words 'consult the nearest competent technician' were found. With guidance from AES, Vancouver, the problems were cured and within one or two voyages GB/ASAP 1 was functioning reasonably well. One rather lively problem which gave my colleague Geoff Allen a nasty shock, in one way but not in another, was when the launcher cut through the mains cable; the ship's staff were very helpful and encouraging and the Electrical

Officer re-wired the damaged part. The Master, Captain Sturcke, took a great interest in positioning the ship prior to launching the balloons and this ensured a high success rate.

After two voyages in the *Manchester Challenger* came a posting to Bracknell to see the 10-ft Finnish ASAP container, which at that time was perched on the back of a trailer at the Met. Office experimental site at Beaufort Park near Easthampstead.

This container was installed on the *CanMar Europe* as GB/ASAP 2, the ship being on the St Lawrence co-ordinated service. Things have a way of compensating for one another, and life on board more than compensated for the smaller container's drawbacks. It was a novel experience being on a ship where the main languages spoken were Flemish and French and the menu often held surprises, but everyone was extremely friendly and allowed one soon to settle in to shipboard routines.

Operationally, the 10-ft container gave rise to many different problems, and recourse to the onboard manuals did not always produce the desired results. However, as this ASAP was a prototype, it took a few voyages to come up to full operational speed. To facilitate the operation, a few innovations were introduced; for instance, a portable launcher reduced the necessity for turning the ship into wind for balloon launching, although the Masters had been most helpful and willing to accommodate the ASAP operator on all occasions.

Transferring from one ship to another with similar but separately designed systems created problems, as it was possible to return from leave and try to operate one set of equipment by the wrong method, especially when joining at 10 p.m. on a Saturday evening and having to send up a balloon on test almost immediately. In addition to the onboard activity, the setting up in Canada of communications and the helium supply for balloon inflation was an interesting exercise, aided by the welcome assistance of the Canadian maritime agent in Montreal.

To date, most of the problems seem to have been ironed out and preparations are in hand for the next stage in the programme, which is the onboard training of our replacements, who are to be commerical operatives of J. Marr & Son of Hull. So far, the operation in rough winter weather has proved that the equipment is workable in the North Atlantic and that the principles are sound.

One by-product of the ASAP operation has been the enhanced observational coverage provided, as the regular synoptic hour observations made by the deck officers have been supplemented by intermediate ones, usually made three times daily by the duty ASAP meteorologist on board. Captain Sturcke may have been of the opinion that the ASAP operators had been sent on board by the Met. Office as an economy measure to ruin his chances of receiving an award as Master of a Voluntary Observing Ship! Nevertheless, the author found practical experience of ice observing to be interesting. Transmission of surface observations on the *Manchester Challenge* is by the Meteorological Observing System for Ships (MOSS) which will eventually be fitted on the *CanMar Europe* [installed June 1988].

Internationally, ASAP is now off to a good start; in addition to the joint Canadian/U.S./Japanese operation in the Pacific and the U.K. and the Finnish operations described earlier, France has four systems operating in the central Atlantic. By mid-1989 the Federal Republic of Germany is expected to have four new systems in operation and Denmark plans to have one operating on a ship

plying between Denmark and Greenland during the currency of the Operational World Weather Watch Systems Evaluation — North Atlantic, due to continue until the end of this year [1988]. WMO has recognised ASAP as being an important component of the Global Observing System and one objective of this article is to prepare mariners for the likelihood of meeting the system in the future.

In the long term, world-wide ASAP coverage is envisaged, comprising at least 15 to 20 systems on the Atlantic, 10 to 15 systems on the Pacific and 20 to 25 in the Southern Hemisphere. In common with the experience described here, a large measure of the success in future systems will depend on the interest and good-natured expertise given freely by members of the international seafaring community.

The Incredible Voyage of William Bligh *

Lieutenant William Bligh was appointed to command the armed transport *Bounty* in August 1787 to ship a delicate cargo of bread-fruit seedlings from the Society Islands, French Polynesia, in the South Pacific, to the West Indies. Bligh was a former shipmate of Captain James Cook, aged 33 and his command of 215 tons displacement and 90 feet in length had been extensively refitted to resemble a floating greenhouse. She was manned by a crew of 46 including Fletcher Christian and only two other men who had previously sailed with Bligh, who was the only commissioned officer on board.

Bounty had sailed from Spithead at the end of December 1787; on encountering adverse weather when rounding Cape Horn the decision was taken to alter course and proceed across the South Atlantic to Cape of Good Hope. Tahiti was reached in October 1788 and the ship remained there until April 1789. During the five months of comparative inactivity, ship's company discipline was allowed to decline, many of the crew succumbing to the fatal attractions of native women and an easy-going way of life. Bligh may have been able to avoid this state of affairs although he was subsequently reluctant to accept the blame. Lower deck morale worsened after *Bounty* sailed for other islands, mainly due to Bligh's extraordinary behaviour towards his men, particularly to Christian. The crisis came on 28 April when, in Bligh's own words: '...just before sunrise the people mutinied, seized me while asleep in my cabin, tied my hands behind my back, carried me on deck in my ship, put 18 of the crew into the launch and me after them and set us adrift. Tofua bearing NE 10 leagues (30 miles). Ship steered to the WNW — four cutlasses were thrown into the boat...'

* The National Maritime Museum, Greenwich, south-east London, is staging a major exhibition entitled *Mutiny on the Bounty*, from 28 April to 1 October 1989.

In disposing so swiftly of their commanding officer and his loyal supporters the mutineers were not unreasonable. Their launch was a strongly built craft from White of Cowes, Isle of Wight, equipped with masts, sails and oars; it was loaded with 150 lbs of bread biscuits, 16 four-pound pieces of pork, 6 quarts of rum, 6 bottles of wine, 28 gallons of water and 4 empty breakers (barricoes). Besides Bligh there were Sailing Master Fryer, Boatswain Cole, Gunner Peckover, Carpenter Purcell, a master's mate, Midshipmen Hayward and Elphinstone as well as sailmaker, acting surgeon, quartermaster and his mate, two cooks, butcher and the botanist Nelson. In addition to chests containing the carpenter's tools and nails there were spare sails, cordage, clothes, hammocks and navigational equipment. All that gear plus 19 men in a 23-ft boat must have made for an extremely uncomfortable situation, especially in foul weather.

Under oars and heavily overladen the launch reached the island of Tofua, see Figure 1, but requests for food and water were met by distinctly hostile reactions from the natives. The start of their passage into the unknown received a further setback when the unfortunate quartermaster Norton was hacked to pieces in the surf just as Bligh and the rest managed to make their getaway by cutting through the stern painter of the boat. They were all frightened by the experience and resolved to give all islands as wide a berth as possible; Bligh decided to head for Timor in the Dutch East Indies where he believed the welcome would be more friendly, even though he knew that island to be more than 3,000 miles distant.

With the crew's assent Bligh started rationing at once, each man receiving daily an ounce of bread biscuit and a half pint of water, with the occasional morsel of pork or a teaspoonful of rum. Bligh improvised a pair of scales out of coconut shells, using musket balls as weights, to help share out the meagre rations three times daily. They had to press on under all sail that could be set to avoid starvation or dying of thirst.

Bligh wrote in his journal: '...As our lodgings were very miserable and confined for want of space I...put ourselves at watch and watch, so that one half always sat up while the other lay down on the boat's bottom or upon a chest. Our limbs were dreadfully cramped, for we could not stretch them out and the nights were so cold and we so constantly wet that after a few hours sleep we could scarcely move.' On meeting with severe weather conditions after leaving Tofua he continued '...between the seas the sail was becalmed and when on top of the sea it was too much to have set...we were in very imminent danger and distress, the sea curling over the stern... which obliged us to bale with all our might.' Fortunately the SE Trades blew fairly constantly in direction if variable in strength and often accompanied by rain squalls which however at least renewed their water supplies. Acute discomfort was partially alleviated by Bligh's instructions to dip clothes into the warm sea and wring them out. Fifteen days of May passed before they were able to feel warm sunshine.

For navigation Bligh had a sextant, a quadrant, a compass taken from *Bounty*'s binnacle and a log line. To provide mathematical, astronomical and geographical data there were two well known books but no charts. For time keeping Bligh used Gunner Peckover's watch until it stopped on 2 June; after that much of the navigation was by guess-work. The crew were taught to stream the log, a piece of wood shaped into a quadrant by Carpenter Purcell, thus measuring the distance run each watch. Throughout the voyage the average speed made good over the ground was four knots.

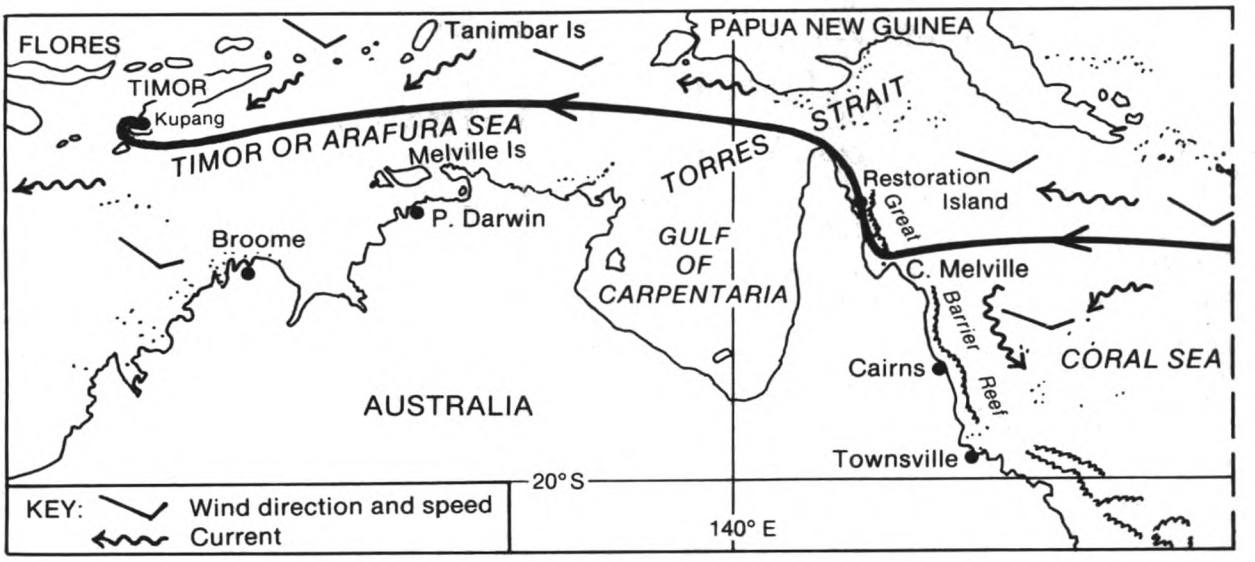
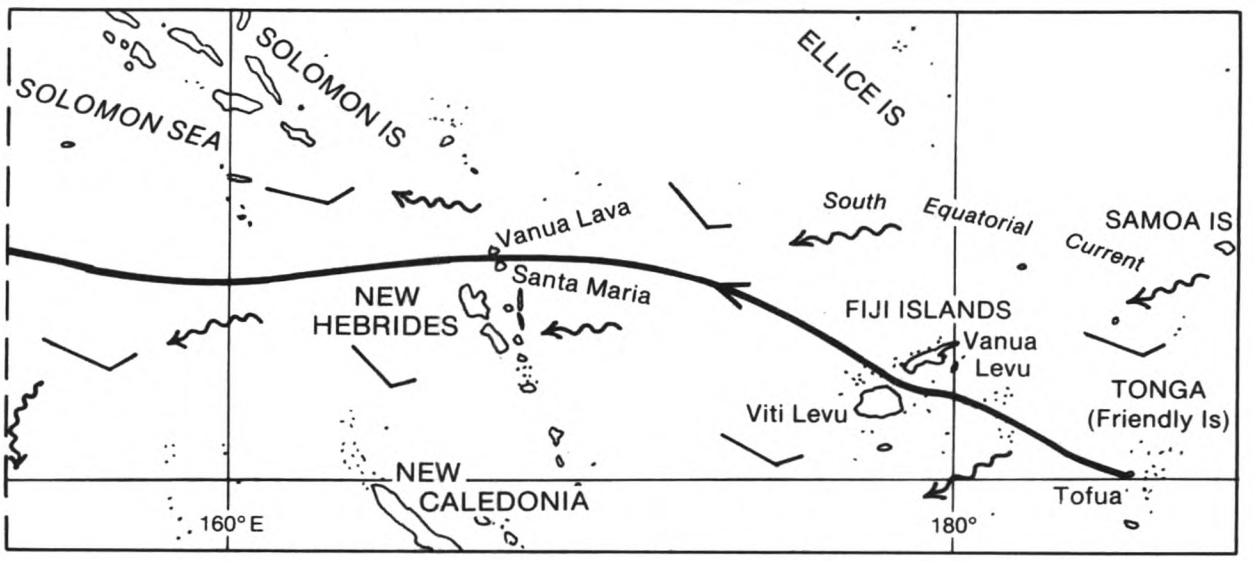


Figure 1. Course navigated by Lieutenant William Bligh, from Tofua to Kupang via Restoration Island.

From the 'Friendly Islands' Bligh sailed west through the Fiji group and the New Hebrides (now Vanuatu) then crossed the Coral Sea to reach the northern end of the Great Barrier Reef. Bligh's meticulous log showed course steered, distance made good, the accurate observation of the sun's altitude and, more difficult, the estimation of current sets and leeway; all indicating his outstanding performance as a navigator. On reaching the Australian coast after 25 days at sea his latitude error was two miles and the total longitude error just 50 miles. Approaching the Great Barrier Reef Bligh found that they had enough bread for only 29 days, hardly sufficient to reach Timor and the supper ration was therefore stopped. On closing land, bird sightings increased and boobies, caught by hand, were divided, entrails and all, amongst the eighteen men. Safely through the reef the boat arrived on 29 May at what Bligh named 'Restoration Island' [12° 37′S, 143° 27′E], where the crew staggered ashore and found water, oysters, fern roots and the edible tops of palm trees. They rested in this area for six days recuperating from their ordeal, keeping clear of the natives on shore and in canoes and gradually working northwards along the Australian coast until they were able to round Cape York in the Torres Strait and sail westerly for the port of Kupang on Timor.

Bounty's launch carried two masts, each with a dipping lugsail capable of reefing which was frequently done. Bligh had the masts fitted with shrouds and also had a canvas weather cloth fitted around the boat above the gunwhale with special protection for the stern. Even then, seas were continually shipped as the overloaded launch ran before the wind, making steering very difficult with the constant fear of broaching to and capsizing.

Once in the Timor Sea they had to revert to bread and water for meals, but one day they were delighted to catch a dolphin which made excellent eating. However, by 10 June Bligh recorded in his log that more than half his crew were approaching an end to their distress and he was none too sure of making a landfall, being uncertain of his exact longitude. Progress in the previous two days had been frustratingly slow and it was not until the evening of Sunday 14 June that he entered the port of Kupang and they were able to land. Bligh wrote in his log: '...it is not possible for me to describe the pleasure which the blessing of this



land diffused among us. It appeared scarcely credible to ourselves that in an open boat and so poorly provided we should have been able to reach the coast of Timor in 41 days after leaving Tofua having in that time run, by our log, a distance of 3,618 miles and that, notwithstanding our extreme distress, no one should have perished on the voyage.'

They were hospitably received by the Governor of Timor, who offered friendship and assistance, but their troubles were not over. First the Botanist, Nelson, died, then five others in steady succession; Bligh himself gradually recovered after moving to a healthier part of the island and receiving treatment from a doctor. Bligh and the remainder of the survivors reached England in March 1790; some time later, 14 of the mutineers were brought to trial.

William Bligh may not have run a happy ship, his chief defects being conceit, tactlessness and insensitivity to the feelings of others, but he was nevertheless an officer of great integrity and punctilious devotion to duty. No one can take from him his qualities of leadership, courage and skill as a navigator and seaman, for which he deserves the highest possible credit.

REFERENCES

Press release from the William Bligh Trust by Captain John Wells, compiled from *The Bligh Notebook*, a transcription and facsimile of Lieutenant William Bligh's rough account of his voyage in *Bounty*'s launch from the ship to Tofua and thence to Timor, 28 April to 14 June 1789, published by Allen and Unwin in association with the National Library of Australia.

Note. To commemorate the 200th anniversary of this remarkable feat, the William Bligh Trust was formed in 1987 in order to build a replica of the launch and select a crew of six to re-enact the voyage from Tofua to Timor in April 1989. Initiative for this project belongs to Jasper Shackleton who is not only Chairman of the Trust and will skipper the boat, but has also personally built the launch from drawings obtained from the National Maritime Museum, Greenwich, using larch and English oak. Named *Elizabeth Bligh*, after Bligh's wife, it will carry similar rig to the original craft and was launched from the Maritime Workshop in

Gosport, Hampshire. Selection of the crew, including a doctor and a navigator, took place in late 1988, so that the boat could be transported to the Pacific early in 1989. The volunteers have been assured that Jasper Shackleton is no William Bligh, that the natives they will meet will be more friendly than those encountered by the original *Bounty* crew, and that they will not be expected to endure the privation of the 1789 voyage. Climatological information has been provided by the Marine Advisory and Consultancy Service of the Met. Office, covering the route, and undoubtedly the expedition will offer a unique experience of open boat sailing. Further information can be provided by the expedition consultant, Mr Andrew Petherick, 107 Tavistock Street, Bedford MK40 2RR.

LONG ASSOCIATION WITH SHIPOWNERS — LYLES AND HOGARTHS

A short history of the Lyle Shipping Company appeared in the April 1976 edition of *The Marine Observer*. This year's item completes that company's story, linked with its contemporary in origin and style, as well as commercially, H. Hogarth and Sons Limited.

The Scottish founders of the two separate companies followed roughly similar paths to fame, starting from adjacent counties in the nineteenth century. Hugh Hogarth, from Ayrshire, bought his first ship, the *Fearless*, in August 1868; Abram Lyle took over the management of ships in the 'Diamond K' line from his home town of Greenock in 1872. The *Cape Comorin*, an iron ship of 1,257 gross register tons, built in the following year, was the first of the 'Cape' ships to appear on the scene. It was 1881 when the first 'Baron' came on the scene for Hogarth, the *Baron Ardrossan*. These prefixes were adhered to for the two companies' ships until dealings were suspended in 1987.

One of Lyle's early sugar ships was *Cape Wrath* and this, together with several others, was recruited into the Meteorological Office Voluntary Observing Scheme in the 1880s. The first Lyle ship for which there is a meteorological logbook still in existence in the National Meteorological Archives was *Cape St Vincent*, commanded by Captain J.C. Prout in 1881 from Dundee to San Francisco.

Hugh Hogarth's association with the port of Ardrossan continued until his death in 1904 and it was in the following year that the third *Baron Ardrossan* became a voluntary observer on her delivery from shipbuilders A. Rodger of Port Glasgow. Her first meteorological logbook was received in the Meteorological Office at 63 Victoria Street, London on 18 September 1906, and concerned the voyage from Barry via Suez and India to Australia and return to Antwerp. The Master was Captain S.C. Kennedy and the log was carefully kept by Second Officer A. Fraser. At the turn of the century such logs were still being kept exclusively by the Master. The meteorological log was not commenced until passing Gibraltar on 22 December 1905 and was maintained at sea until the ship's homeward passing of Ushant. Long stays in port were commonplace in those days, the log showing gaps of 32 days in Calcutta, 29 in Rangoon, 6 in Singapore; at Bunbury, Western Australia, 16 days were spent, then 19 in Aden on the homeward voyage at speeds of from 8 to 10 knots. It was a fairly uneventful voyage weather-wise, only a meteor being reported on 17 April.

Many of the ships of both Lyles and Hogarths carried out voluntary observing, and the ships' names were also perpetuated over the years. The fleets of both companies were depleted by wars and by recession but they always managed to rebuild and survive. The Lyle family maintained an interest in Lyle Shipping Company until dealings were suspended. In the same way, there was always a Hogarth family link with H. Hogarth and Sons.

The first trading contract between Lyle and Hogarth had taken place in September 1964, when a joint contract was arranged to carry five cargoes of phosphates from Tampa to Australia. Two years later formal proposals were put forward for closer co-operation between the two companies, culminating in the formation of Scottish Ship Management in May 1968. To affirm the corporate identity of the new grouping, both Lyle and Hogarth moved from their respective Glasgow offices into adjacent premises in Buchanan Street. The new fleet experienced a period of expansion and of the 15 or more ships of each company which co-operated in the voluntary observing scheme, among those taking part were *Cape Ortegal* (1976) and *Baron Ardrossan* (1970). Other famous names associated with weather observing are *Cape Arnhem, Cape Finisterre, Cape Trafalgar, Baron Belhaven, Baron Kinnaird* and *Baron Inchcape*; a selection of observing ships from Lyle and Hogarth appears opposite pages 61 and 76. Further expansion into support of the offshore industry came when Lyle Offshore and Seaforth Maritime came into being in May 1972; 15 tug and anchor handling vessels were commissioned in the next few years. Further diversification into engineering, airways and insurance ensured the continuing prosperity of the group until it became Lyle Ship Management in February 1985. Then followed a period of difficulty caused by the world-wide over-supply of shipping relative to market requirements. Thus entering a period of unprecedented recession with a high degree of commitment and borrowings, Lyle Shipping had to seek the appointment of a Receiver in May 1987, so bringing to an end a history of 120 years as shipowners.

SPECIAL LONG-SERVICE AWARDS

For the twelve-month period to 31 December 1987 the Director-General has pleasure in selecting the following four shipmasters for the award of barographs, in recognition of meritorious long service in the field of voluntary marine observing for the United Kingdom:

CAPTAIN T. FYFE, Ben Line Ltd.
CAPTAIN M.J. GODBEHEAR, P. & O. Containers Ltd.
CAPTAIN D.V. NEWLIN, Blue Star Ship Management Ltd.
COMMODORE T.D. RIDLEY, RD*, RNR, Cunard Steam-ship Company plc.

Captain Fyfe, with 21 observing years on record, sent the first of his 38 meteorological logbooks to the Met. Office from the *Benarty* in December 1953 and has 20 logs marked 'Excellent' to his credit.

Captain Godbehear's first log came from the *Hector* of Alfred Holt & Company in October 1959, and in 19 observing years he provided a total of 43 logs, 34 of which were rated 'Excellent'.

Captain Newlin's name first appeared in a log received from the *English Star* in August 1953 and a further 65 logs followed in 26 years of observing; 23 of those logs were assessed as 'Excellent'.

Commodore Ridley recalls the time when he mailed his first meteorological log from the Cairn Line of Steamers ship *Cairnvalona*, which reached the Office in December 1947. Thirteen 'Excellent' logs were included in the total of 43 received during 26 observing years.

To qualify for nomination for a barograph award at least one log must have been submitted in the year in question and a minimum of 18 years observing has to have been carried out. The first such award was made by the Director of the Meteorological Office in 1948. A presentation ceremony, to take place at Bracknell Headquarters, will be arranged.

AURORA NOTES APRIL TO JUNE 1988

By R.J. Livesey

(Director of the Aurora Section of the British Astronomical Association)

In Table 1 are given the basic details of auroral observations submitted by mariners in the period. Table 2 summarizes the auroral activity reported by land and by sea observers. Isolated and unconfirmed reports are ignored where there is no certain evidence that aurora was present. This screening of reports can give rise to problems because we have well authenticated observations of an aurora lasting only seconds in time or occasions where an isolated observer without experience has reported, say, a glow of doubtful origin, found subsequently to be genuine. On the other hand, we have aurora reports which have resulted from lasers being played on the sky haze, or from reflected refinery flare stacks and even Soviet rocketry, among other things.

After a period of activity in the autumn of 1987, the Earth's magnetic field has been relatively quiet, a fact reflected in the corresponding lack of auroral activity. The sunspot cycle has been increasing in intensity and current forecasts are that it might be one of the biggest on record. Our present observations suggest that

auroral activity is lagging behind the sunspots, but we have the advantage of knowing what is happening later in 1988 to be able to advise you that more aurorae start to come down into the lower latitudes; so, 'Watch this space' should be your motto.

My colleague Dr David Gavine confirms that 1988 has been an excellent year for the observation of noctilucent clouds (NLC), those beautiful clouds seen

Table 1 — Marine Aurora Observations April to June 1988

Date	Ship	Geographic Position	Time (GMT)	Forms in Sequence
21/22 Apr. ..	*Cumulus*	57° 07'N, 20° 15'W	0345	qN
7/8 May ..	*Cumulus*	57° 00'N, 20° 00'W	0020–0330	qHA, pHP, qHA
8/9 ..	*Cumulus*	57° 00'N, 20° 00'W	0145–0300	qN

KEY: p = pulsating, q = quiet, HA = homogeneous arc, HP = homogeneous patch, N = unspecified form.

Table 2 — Principal auroral activity reported April to June 1988

Date (Night)	Location and Number of Observers	Geomagnetic Latitude Lowest	Highest	at Storm Peak	Maximum Storm Activity Code*	Time (GMT)
3/4 Apr.	Finland, Scotland (4)	59	62	62	7	1830–2350
5/6	Manitoba, Finland (3)	59	62	62	7	1920–0244
6/7	Finland (1)	59	—	—	7	0356–0426
10/11	Finland (2)	62	62	62	5	2140–2145
11/12	Finland (2)	62	62	62	4	2100–2315
13/14	Finland (1)	62	—	—	4	2105–2300
14/15	Finland (1)	59	—	—	5	2200–2320
21/22	N. Scotland, Manitoba (2)	59	61	59	6	2245–0907
22/23	Finland, N. Scotland (4)	60	62	62	6	2045–0149
27/28	Manitoba, Orkney (2)	59	61	59	6	2340–0435
6/7 May	Orkney, N. Scotland (2)	61	61	61	2	2320–0045
7/8	'Lima', Orkney (2)	61	63	63	5	2245–0330
8/9	'Lima', Scotland (2)	60	63	60	1	2150–0300
16/17	Manitoba (1)	59	—	—	6	0434–0523
18/19 Jun.	Manitoba (1)	59	—	—	3	0512–0600
25/26	Manitoba (1)	59	—	—	6	0432
28/29	Manitoba (1)	59	—	—	6	0556
29/30	Manitoba (1)	59	—	—	6	0639

*Storm Activity Code: 1 = Glow or patch, 2 = Homogeneous arc or band, 3 = Rayed arc or band, 4 = Ray bundles, 5 = Active moving or flaming storm, 6 = Coronal or half-sky, 7 = All-sky storm.

from latitude 50 to 65 degrees north in the twilight arch from late May until mid-August. These clouds lie at 80 to 85 kilometres in height and are backlit by the sun below the horizon. A short review of the observations is presented in Table 3.

Much has yet to be discovered about the NLC. One theory proposed is that part of the atmosphere in which they are found, called the mesosphere, is required to be cool in order that the clouds may form. Auroral activity causes

Table 3 — Summary of noctilucent cloud visible in north-west Europe, Summer 1988.

Date	Time (GMT)	Number of Observers	Location or Lowest Latitude at which NLC Visible
14/15 May	2203–2240	1	56° N
16/17	2200–0200	1	55° 30′N
20/21	0015–0215	2	55° N
26/27	Not known	1	60° N
4/5 Jun.	2215–0045	1	56° N
7/8	2245–0050	6	55° 30′N
11/12	2110–0220	11	52° 30′N
12/13	Not known	1	Finland
15/16	0030–0145	1	55° 30′N
16/17	2220–2305	1	56° N
17/18	2135–0215	3	55° 30′N
18/19	2337–0200	4	53° 30′N
19/20	Not known	1	Finland
20/21?	2145	1	60° N
21/22	2151–0100	10	54° N
22/23	2120–0130	11	51° 30′N
23/24	2210–0130	5	55° N
24/25	2235–0118	3	55° N
27/28	2115–0230	6	53° 30′N
28/29	Not known	1	Finland
29/30	2238–0130	5	54° N
2/3 Jul.	2150–0300	19	51° 30′N
3/4	2120–0250	9	54° N
4/5	Not known	1	Finland
6/7	2125–0225	8	52° N
7/8	2100–0100	9	52° N
8/9	2145–0200	5	56° N
9/10	0235–0250	1	51° 30′N
11/12	2330–0125	3	55° N
12/13	2115–0245	7	55° N
13/14	2345	1	60° N
15/16	0200	2	56° 30′N
16/17	2055–0000	3	55° N
20/21	2350–0005	1	57° 30′N
22/23	2310–2320	1	60° N
24/25	2320–0100	7	57° 30′N
25/26?	Not known	1	60° 30′N
26/27	2305–0305	7	51° 30′N
27/28	0245	3	56° N
28/29	0215	1	56° 30′N
3/4 Aug.	0200–0315	2	55° N
5/6	2130–0328	2	55° N
6/7	0006	1	59° N

heating of the upper atmosphere and could prevent the clouds from forming. Be that as it may, we appear to have had a summer with low levels of auroral activity and high levels of NLC. How does one account then for the authentic observations, on occasions, of aurora and NLC being visible at the same time?

Aurora observers are ideal for observing NLC, and in the appropriate latitudes it gives them something to do in summer when the twilight is blocking out auroral light. Fine observing networks now exist in Canada, the United Kingdom, Denmark and Finland as well as in Soviet territories. We have received an excellent collection of panoramic photographs of NLC from Holger Andersen of Vildbjerg in Denmark. He used Kodacolor Gold 100 film with a f 1.2/50 mm lens at 15- and 20-second exposures. For a 200 ASA film, Dr Gavine suggests 8-second exposures at f 2.8. Results can be quite spectacular and we hope that some of our mariner friends will 'have a go' with the camera next year if they are in port and a stable platform is available. Good, although not top quality photography has been achieved from moving ships and aircraft, so please do not rule out trying your luck from a ship sailing in a calm sea.

One of the problems facing any examiner of auroral and NLC observations is to determine whether or not the rise and fall of activity is real or is the result of the availability of observers who are keeping an adequate eye on the sky. In earlier years, variations in the frequency of the detection of NLC have been attributed to the presence or absence of the great pioneers of NLC observing.

With regard to sunspot and auroral activity, there is a period in history between 1645 and 1715 referred to as the Maunder Minimum, and named after E.W. Maunder of the Royal Observatory, who concluded in his studies made in 1893, that sunspots had been virtually absent then. Many scientists have reviewed old meteorological and other records to determine whether or not the aurora was absent during the same period. Some have concluded that the auroral record supported the existence of the Maunder Minimum while others claim that there are sufficient records of the presence of the aurora to state that the general level of auroral activity was consistent with the long-term record when sunspots were recorded from 1715 onwards.

The observing and recording of the Maunder Minimum aurorae must, in Central Europe, have been affected by the Thirty Years War. Observers had other things to worry about, records destroyed in the pillaging and destruction that war brings, and other factors. To historians of solar activity, such records are possible ways of assessing what the sun was doing way back into past centuries and before the Christian era. The presence or absence of observers capable of leaving behind a record that can correctly be interpreted is, therefore, an important factor.

We would draw particular attention to the flash auroral storm on 25/26 June, seen overhead as a rayed structure at 0432 GMT by Todd Lohvinenko in Winnipeg. This structure lasted only about 5 seconds. Later in the year we shall report upon a similar flash aurora seen at Edinburgh, which lasted only 10 seconds. Other similar short-lived events have been reported in the past, some genuine aurorae and the odd one turning out to be meteoric activity. It is probably more by luck than by perseverance with observing that such short-lived aurorae are observed and recorded. Nature has a habit of catching us unawares at times, but there are these occasions that keep many of us on our toes in the hope that we shall see something interesting. So, best wishes for good voyages and clear skies.

From *The Marine Observer* 40 years ago
Editorial

'Fog everywhere. Fog up the river, where it flows among green aits* and meadows; fog down the river, where it rolls defiled among the tiers of shipping, and the waterside pollutions of a great (and dirty) city. Fog on the Essex marshes, fog on the Kentish heights. Fog creeping into the cabooses of collier-brigs; fog lying out on the yards, and hovering in the rigging of great ships; fog drooping on the gunwales of barges and small boats. Fog in the eyes and throat of ancient Greenwich pensioners, wheezing by the firesides of their wards; fog in the stem and bowl of the afternoon pipe of the wrathful skipper, down in his close cabin; fog cruelly pinching the toes and fingers of his shivering little 'prentice boy on deck. Chance people on the bridges peeping over the parapets into a nether sky of fog, with fog all round them, as if they were up in a balloon, and hanging in the misty clouds.'

Thus wrote Charles Dickens in the opening chapter of *Bleak House*. Fog is a devilish unpleasant acquaintance — cold and clammy and damp — and is scarcely an inspiring subject about which to write. But to most of us, inhabiting the western European seaboard, fog had a very real and significant meaning during the six days, 26th November to 1st December 1948. During this period a blanket of fog enveloped most of the British Isles and, as far as central London was concerned, an all-time record of 114 hours continuous fog was recorded. Transport by road, rail, sea and air was considerably affected by this unceasing thick weather, and race meetings and football matches had to be abandoned - a very serious matter to the British public. *The Queen Elizabeth*, having been held up in Southampton for several days due to an 'unofficial' strike was further delayed for the period of the fog. Considerable delays to shipping occurred at other ports, including the Mersey, where the famous shore-based radar equipment is in operation. In the Thames, visibility was down to twenty yards at times. Coal shipments down the East Coast were almost at a standstill and colliery production figures were affected due to lack of empty wagons at the pitheads. Air traffic was almost non-existent on some days, although it is noteworthy that despite the fog in that area the Berlin airlift continued almost unbroken.

For the meteorological picture we need to go back to 22nd November, when there was a small centre of high pressure over the British Isles with a complex depression in the Central Atlantic, giving southerly winds in the eastern Atlantic. By 26th November, the anticyclone had intensified and moved eastward to south Germany and the southerly winds off the British Isles had encroached slowly eastwards and backed to the south-east. This combination of anticyclonic conditions with light winds and moist, stable air was very favourable for fog formation, and the fog duly arrived.

By 28th November, the high-pressure centre had moved farther eastwards, leaving a belt of high pressure from eastern France to Russia and there was a cold front over northern England, while there had been more or less continuous cyclonic activity in the Atlantic. The high-pressure centre moved to the Balkans by the 30th, and by 1st December a secondary depression was able to move in to the British Isles from the Atlantic and clear away the fog.

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* An 'ait' or 'eyot' is a name used locally for a small island.

In the vicinity of the industrial areas of England the amount of smoke pollution which is a heritage of the industrial revolution makes fog particularly thick and unpleasant. Most of us who have navigated in the North Sea will know the 'industrial haze' which prevails with westerly winds off the Tyne and Tees areas. Despite the good work of the Smoke Abatement Society and the Atmospheric Pollution Committee, it will inevitably be many years before the problem is solved in this country. But ordinary atmospheric fog will still prevail, and it seems that all the meteorologists can hope to do is to forecast its probability with reasonable accuracy on a relatively short-term basis. The use of 'Fido' — which implies the dispersal of fog by artificial heating over a small area — has been used with some success on airfield runways, but it is obviously too expensive to be economically practicable. There remains the use of electronic aids — radar and similar apparatus — whereby aircraft and shipping can navigate with reasonable safety, irrespective of the degree of obscurity. The individual skill, courage and judgment of the navigator is still called to account — be he seaman or airman — for all instruments have their limitations.

LETTERS TO THE EDITOR

Cyclone suppositions...

The Tropical Cyclone begins with a 'low pressure' which, building up, acquires a lateral motion. This lateral motion has been explained away as the carriage of low pressure along the periphery of the permanent high. The recurvature of the storm path around 30° latitude occurs where the sharp curvatures of ellipse of the high pressure lies. But how does one explain the path of cyclones in the Arabian Sea, Bay of Bengal and the China Sea? The permanent high in this area lies on the land mass of Asia and so far as the Bay of Bengal is concerned, it does not have a 30° latitude.

Recently we had a devastating storm in the Bay (of Bengal). Referring to the Admiralty Sailing Directions, I find the paths of cyclones recorded therein for several years had very little in common. Most of them did not follow a parabolic path. Their only common factor was their northerly drift. How then does one account for their lateral motion and what propels them in these areas?

A seaman does not have the deep scientific background of a meteorologist but his profession calls for familiarity with several disciplines. Thus unblinkered but half-baked, what is propounded could be a mistake. But just the same it is original, so here we go.

Watching the satellite picture of the latest cyclone in the Bay reminded me of a giant cylinder of great height and hundreds of kilometeres in diameter spinning away vertically at high speed. The mind-boggling mass consisting of clouds, moisture and wind revolving at ever increasing speed must develop gyroscopic inertia at some point. Let me recall here the properties of a gyroscope.

1. The axis around which the spin takes place, due to gyroscopic inertia, would tend to remain fixedly pointed in space.
2. Due to the Earth's rotation, such axis will tend to tilt *vis-à-vis* the horizon.
3. 'Precession' is a property whereby a disturbing force at any point on the rotating axis would act 90° away along the direction of spin.

This great wobbly cylinder of cyclone at some point achieves gyroscopic inertia. Thereafter the Earth's rotation tilts it to the west (in the northern hemisphere) causing an upthrust at its western end. This, along with the anti-clockwise rotation, generates a precessive force to the north. The northerly component of the drift could thus be explained.

Several hundred kilometres diameter of the cylinder can easily sense the sphericality of the Earth. The first precessive drift to the north of the lower end of the cylinder causes the upper end to lag behind and lean south. In the meantime the earth continues to rotate and the next upthrust shifts from west to southwest, causing the precessive force to generate northwesterly drift. The rest of the cylinder higher up trails along its lower end, held together by cohesive forces of whatever generates the cyclone. I feel that the erratic loops and whorls of a cyclone's path at times, are by-products of a large diameter-height discrepancy along with the speed of rotation. This leads to larger wobble and frequent change of upthrust *vis-à-vis* the Earth's rotation.

Captain Somesh Chauduri, FNI, Calcutta, India.

...and typhoon truths

During m.v. *Kowloon Bay*'s northbound passage in the South China Sea towards Korea on 25–26 October 1988, typhoon 8828, 'Ruby', was encountered. This typhoon caused much devastation in the Philippines. As our paths were expected to meet, the vessel was stopped for seven hours to allow the typhoon to pass an estimated 150 n.mile ahead of the vessel. The predicted speed of advance of the typhoon at that stage was given by Japan, Hong Kong and Philippine authorities to be generally 15 knots in a west-north-westerly direction.

After the vessel resumed passage it became obvious during that night, and before new reports were received, that the forecast was wrong and that the storm had become very slow moving. A broad alteration of course to the east was necessary to pass the typhoon on the favourable semicircle and close to the Luzon cost.

On the southbound passage back from Japan the vessel was again plotting a storm, 8829, 'Skip', in approximately the same area. This time speed was increased to pass ahead of the storm and to retain favourable winds. Again reports of the projected advance gave between west-north-west at 12 knots and west at 18 knots. It was calculated that at closest approach at 1900 GMT on 8 November the vessel would pass about 50 n.mile ahead of this storm centre, which was not too severe.

However, during the night of the 8th, the storm slowed considerably and began to dissipate, having a forward movement of about 5 knots in a westerly direction. The vessel passed ahead of the indeterminate centre by about 80 n.mile.

Neither of these storms was particularly severe although 8828 was more impressive. Both confirmed the unpredictability of movement of tropical cyclones that I have often observed. The general laws of movement of typhoons seem to hold good whilst the storm is over oceanic waters, but on approach to Japan, the Chinese mainland or South China Seas it is fair to say that their future movement becomes much more uncertain.

Captain L.E. Howell, Master, m.v. *Kowloon Bay*.

Long-distance bottle

I wonder if you would be interested in this item. As a hobby at sea I put messages in bottles and set them adrift. Whilst on the tanker m.v. *Scottish Eagle* on a voyage from San Carlos, Falkland Islands to Grytviken, South Georgia I threw a bottle overboard on 21 October 1985. I have now had an answer from a lady who found this bottle on 3 March 1988 at a place called Surat Bay which is on the southeast coast of South Island, New Zealand. I have worked out the distance the bottle travelled as about 10,500 miles, a remarkable distance to drift. The nearest town to Surat Bay is Balclutha.

D. Blanch, S1A, m.v. *Canterbury Star.*

The Clutha River, on which Surat Bay and Balclutha are situated, lies about 40 miles south-west of Dunedin, entering the sea about the same distance away from the southern coastline of South Island.

Assuming Mr Blanch's ship was midway between the Falklands and South Georgia in estimated position 53°36'S, 58°21'W, the shortest distance to Surat Bay is by great circles westwards via Amundsen Sea off Antarctica, a distance of about 4,320 n.mile. However, it is certain that the drifting bottle would have travelled eastwards by the Southern Ocean Current. The shortest distance the bottle could have travelled this way is about 8,814 n.mile, a figure remarkably close to Mr Blanch's estimate in statute miles. Assuming the bottle had arrived only on the day it was found, on its 864-day passage it had made an average speed of 0.43 knots covering over 10 n.mile per day; it is probable that it had made the passage at a faster rate than this.

Personalities

(Readers are invited to notify the Editor of observing officers retiring from the Navigating and Radio Departments.)

RETIREMENT — CAPTAIN B. AUSTEN-SMITH left the sea for voluntary retirement on 28 March 1988 after spending 39 years in ships of the P. & O. Group.

Bryan Austen-Smith was born in March 1932 in Sussex and educated at Ashdown House and Hurstpierpoint College. After three months at the Sir John Cass College, London, he was apprenticed to the New Zealand Shipping Company and sailed in the *Durham* in February 1949. He remained with that company until the merger with P. & O. in 1971, later serving in the 'Wild Reefer' ships with which he stayed when they were sold to Sembawang of Singapore and renamed, in 1983. He commanded the *Reefer Jambu* when she was delivered from the builders at Ulsan, Korea, in 1985, and remained with that ship until his retirement. At the time of her delivery *Reefer Jambu*, of 12,411 gross tons, was the largest palletised refrigerated ship in the world.

Captain Austen-Smith gained his Master's Certificate in August 1958; for his first command he joined m.v. *Taupo* in Port Huon, Tasmania, in April 1968, relieving Captain J.M.R. Ramsay who was presented with a long-service barograph on his return home. Captain Austen-Smith was in his turn so rewarded, in 1980, for his dedication to the marine observing cause, which at the time of his retirement was recorded in the form of 53 logbooks, 28 of them marked 'Excellent'. He received Excellent Awards in 1973, 1979 and 1980.

He claims that his career followed very humdrum lines and shaped itself

without much interference from himself, but nevertheless expresses gratitude that he was able to be part of the great days of the U.K. to N.Z. and Australia trades on such ships as New Zealand Shipping Company's passenger vessel *Rangitane*: thence to the far more interesting days tramping world-wide for Lauritzen Reefers of Copenhagen, in their position as Operators. Although finding that styles and standards had changed to his dissatisfaction he feels he should be grateful for being allowed to command a fine ship to the end, when so many others have had to face redundancy.

Captain Austen-Smith now lives on the shores of New Zealand's North Island, at Havelock North, concentrating on vine cultivation with occasional fishing trips to Lake Taupo for diversion. Our thanks for his valuable co-operation in the past, and a happy retirement in the future.

RETIREMENT — CAPTAIN T. FYFE retired from the sea on 30 April 1988, little knowing that he had been nominated to receive an inscribed long-service barograph for voluntary observing work carried out to the end of 1987, as announced elsewhere in this edition.

Thomas Fyfe was born in February 1931, educated at the High School of Stirling and underwent pre-sea training at t.s. *Dolphin* of Leith. He first went to sea with Ben Line Steamers in March 1949, sailing in s.s. *Benledi*, subsequently spending his whole sea career with Ben Line. His first meteorological logbook out of a total of 39 came from the *Benarty*, was marked 'Excellent' and characterised all the fourteen logs which he compiled as an Observer, all being of a similarly high standard and receiving the top assessment. He finally achieved 22 years when he was associated with observing and a total of 20 'Excellent' logs. He received Excellent Awards in 1980 and 1981.

Captain Fyfe obtained his Master's Certificate in January 1959 and was promoted to command s.s. *Benmacdhui* in July 1968. We look forward to making his acquaintance when he is invited to Bracknell to receive his barograph from the Director-General and meanwhile wish him health and happiness in retirement at his home in Dunblane in Perthshire.

RETIREMENT — CAPTAIN D.V. NEWLIN also retired, in September 1988, in time for his barograph presentation, having spent more than 35 years as an Officer of the Blue Star Line.

Donald Newlin was born in August 1931 and educated at Royal Liberty School, Romford. before signing on with Blue Funnel Line he attended a short pre-sea course at the Outward Bound School at Aberdovey. He went to sea in December 1947 aboard the *Elpenor* and served on deck with Alfred Holt's until 1952. On obtaining his Second Mate's Certificate in early 1953 he joined Blue Star and remained with that company until his retirement. In the same year he sent in his first meteorological logbook from the *English Star* and went on to provide a total of 66 logs, of which 23 were classed as 'Excellent'; he received Excellent Awards on seven occasions.

Captain Newlin was promoted to command in June 1965 aboard the 3,500 grt *Padova Star*, one of the former small German fruit ships on the Mediterranean to South America run, operated by Blue Star for only about two years. He went on to command many of the well known Star ships, including the *California Star* for almost ten years, during which time he arranged the provision of many first class weather records.

Captain Newlin lives in Dorset, is married and has three married sons (none at sea, he points out) and one daughter preparing to start at music college. We look forward with pleasure to entertaining him when he comes to Bracknell to be presented with his long-service barograph in a few months time, and wish him a long and happy retirement.

Book Reviews

Hurricane Force — The Story of the Storm of October 1987, by George Hill. 223 mm × 140 mm, 224 pp., *illus.* William Collins and Sons Ltd., 8 Grafton Street, London W1X 3LA. Price: £10.95.

Published on the first anniversary of the event itself, this dramatic account of the storm which hit south-east England at 1 a.m. on 16 October 1987 is very well documented and written by *The Times* journalist George Hill. It is written rather as a novel, more perhaps as a thriller, but bringing in so many individual tales of danger, disaster and loss that it is impossible to recall them all after a single reading. For most of the people in the region it has become a night to remember, with nearly all losing a tree, a piece of roof or fencing. The book shows how the storm came to affect the country's political, administrative, productive, historical and domestic life in many different ways. The English always converse about the weather — here is a book to keep readers talking again about a freak weather happening that will live in memory for a very long time. The research and effort in putting together so many isolated incidents and moving stories of hardship and suffering must have been a truly marathon effort. The photographs do full justice to the racy text, and include scenes from a devastated Brittany as well as those from the worst hit areas in the south-east of England. As George Hill says in his summing-up, it was not the worst disaster in the world, but it was ours. Perhaps because the largest number of casualties were not human but symbolic, not people but trees, we were able to immerse ourselves all the more freely in the sense of fundamental upheaval. Although it is undoubtedly a story of many extremes and firsts, the author's predilection for superlatives becomes monotonous after the first few of the 21 chapters, as one begins to recall that it is after all a true tale, stranger than the fiction one sometimes believes one is reading about.

J.F.T.H.

Disaster at Sea, by John Marriott. 235 mm × 155 mm, 176 pp., *illus.* Ian Allan Ltd, Coombelands House, Coombelands Lane, Addlestone, Weybridge, Surrey KT15 1HY. Price: £14.95.

There have been a number of books published about collisions, groundings and founderings at sea, but this publication appears to cover a very comprehensive range of spectacular sea disasters as well as containing introductory chapters on Lloyds of London and the British Search and Rescue Organisation. These two chapters serve well to introduce the reader to the field of marine insurance which is so vital for when disaster happens, and to the various disciplines which must answer the call to the rescue when distress at sea is signalled.

The following chapters each deal with a particular event which ended in a loss at sea of some sort, starting with the foundering of H.M.S. *Captain* in a storm off

Cape Finisterre in September 1870, and ending with the fateful Fastnet Race of 1979 when 15 persons lost their lives in the stormiest race ever run. In between are related the grounding of U.S.S. *Memphis* in heavy seas at San Domingo in August 1916, the tragic stories of the losses of the submarines *Thetis* and *Thresher*, the *Titanic*, *Andrea Doria*, *Torrey Canyon* and *Amoco Cadiz*. Although published in 1987, this book also gives a graphic account of the *Herald of Free Enterprise* capsize at Zeebrugge in March 1987, thereby indicating how up-to-date are the incidents so well related in it.

All the accounts are very clearly written and enhanced by interesting and clear photographs in black-and-white, maps and arrangement plans where considered necessary. The author's selection of a few of the many disasters which have occurred at sea over the last 150 years is based on those likely to be of the most interest to the mariner because of the questions raised over navigation and/or seamanship, as well as those which might be of more general interest to the general public because they deal with human lives and the courage shown by men and women when disaster strikes. He does not include incidents which occurred as a result of enemy action. Mr Marriott has succeeded in putting together a set of varied and thought-provoking accounts of marine disasters worth reading about.

J.F.T.H.

The Natural History of Whales and Dolphins by Peter G.H. Evans. 162 mm × 241 mm, xvi+343 pp., *illus*. Christopher Helm (Publishers) Ltd, Imperial House, 21–25 North Street, Bromley, Kent BR1 1SD. Price: £13.95.

This book is one in a series of '*The Natural History of* ...' all edited by Dr Ernest Neal, MBE, former President of the Mammal Society. Chapters one and two introduce the reader to cetaceans and their ancestral origins which can be traced back through fossil remains. An amazing amount of research has been done to identify these ancient ancestors, and the reader will quickly appreciate that today's whales are not just whales but are the product of 50 million years of evolution. Modern techniques involving the molecular structures of remains are now being developed to aid identification, and the book lists numerous references throughout, many very recent, which can be followed up. Having discussed the background to the subject, the book then concentrates on all living cetaceans, describing in full each species with the aid of excellent drawings and some colour plates. Distribution of species by ocean area follows, and perhaps a selection of maps would have enhanced this part of the book, but on the whole, this section comprises as good a field guide as any.

So wide are the fields of research from which data for this book have been drawn, that there is to be found a greater variety of information under one cover than would normally be expected from work bearing such an uncomplicated title. For example, not only does the author examine the way in which cetaceans produce their unique 'clicks' and songs, he is also able to present a table of sounds giving actual measured frequency ranges and maximum energy; while from work done on feeding and nutrition, the book includes a comprehensive listing of each species and its major prey, which will be of interest to all those who thought that whales and dolphins ate nothing but krill.

The first eight chapters show that cetaceans are intelligent mammals with a complex social behaviour and language. Brilliantly adapted to suit their aquatic environment, they are among the most long-lived organsims on Earth, given the

opportunity. Sadly though, the final three chapters make depressing reading as they relate the story of human over-exploitation of these magnificent mammals, and the gluttony of whaling which still continues today, thankfully on a smaller scale, but in the guise of 'scientific research'. Additionally, a perhaps lesser-known fact is that tens of thousands of dolphins die annually, whether caught in purse-seine nets set for Pacific tuna, or elsewhere, driven in hundreds and thousands onto beaches by fishermen for butchering with gun and knife in the protection of their own interests. Only one example of this latter, particularly distressing spectacle is shown in one small but harrowing colour photograph taken of a pilot whale 'grind' in the Faeroe Islands, although it should be said that the Faeroese culture traditionally uses the meat as food. However, with all the alternatives, both to whale meat and whale products available today, the killing wherever and by whatever means seems harder and harder to justify, traditional cultures or not. The inclusion of more photographic evidence of these kills would help to illustrate the carnage that continues.

Pollution too is playing a major part in the destruction of cetacean habitats, especially in the shallow coastal areas of the oceans. Whether and how populations can cope with greater and greater concentrations of man-made pollutants in their feeding/breeding areas remains to be seen, and the author makes the point that remedial action is needed quickly to avoid the extermination of some already threatened species, such as river dolphins.

Yet it is encouraging to note that despite being reduced to desperately low populations during the 4,000 years that man has known them, no cetaceans have become extinct; indeed a few species are slowly recovering from the ravages of over-exploitation. Their value in the wild as tourist attractions and revenue earners is also being recognised at last; their longevity would indicate they could earn revenue for the countries whose waters they frequent on migration for well over 100 years in the case of Blue Whales.

In all, this is an excellent book containing ample charts, tables, diagrams and references for the interested reader to gain a great deal of knowledge about the mammals which dominate 70 per cent of the Earth's surface.

J.M.

Notices to Marine Observers

MORE INFORMATION FOR 'PERSONALITIES' REQUESTED

It cannot have gone unnoticed by readers that our retirement notices nowadays are all about Masters in voluntary observing ships. This is not because we wish to exclude mentioning retirements of any other Officers, but that we do not hear of any. Readers are asked to help by notifying us of retiring Deck or Radio Officers who have been associated with weather observing for some years, so that we can show our appreciation of their contributions by mentioning them in the journal. It would be helpful if this request could be brought to the notice of Personnel Officers handling Radio Officer appointments.

MAIL FROM SUEZ CANAL PORTS

Continuing losses of meteorological logbooks landed by ships for mail despatch from Port Said and Suez suggest that this practice should be avoided.

MF W/T SERVICE FROM MALIN HEAD CEASES

With effect from 1 January 1989 the MF W/T service at Malin Head Coast Radio Station on 421, 500 and 512 kHz was withdrawn. As a result of the above, Rockall and Bailey have been added to the list of forecast areas broadcast on W/T from Portpatrick Radio.

The MF and VHF R/T services continue to be provided.

CUTTY SARK TALL SHIPS' RACE

The Tall Ships will be assembled at Tower Gateway, London, from 4 to 8 July 1989 and there will be a Parade of Sail on 8 July. The Tall Ships' Race takes place between London and Hamburg from 9 to 12 July and the ships are expected to be assembled at Hamburg from 13 to 16 July. The event coincides with the 800th anniversaries of the Mayoralty of the City of London, and of the formation of the Hanseatic League at Hamburg.

TRINITY HOUSE PILOTAGE AND MARINE SERVICES LIMITED

Trinity House Pilotage and Marine Services Limited, the commercial and contracting arm of the Corporation of Trinity House, has diversified its interests and sphere of activity to encompass the complete spectrum of marine safety related operations.

Mindful of the recent spate of passenger-ship incidents involving the risk of loss of life to large numbers of passengers, the Managing Director of Trinity House Pilotage and Marine Services Limited (THPMS), Captain T. Woodfield, OBE, has stated that whilst statutory international and national safety regulations and classification society rules govern the overall concept of ship safety, there is evidence that passenger-ship owners and charterers may be looking for further assurances of safety. Trinity House has the expertise to fulfil this role by an experienced practical overview of statutory requirements with a complete and thorough ship inspection organisation, followed by the issue of an independent Trinity House certificate of approval that the vessel is operationally safe in all respects.

This certificate would only be issued when Trinity House inspectors were fully satisfied that all safety related requirements such as stability, damage-control procedures, fire-fighting capability, life-saving appliance requirements and crew certification and expertise met with the minimum standards called for by legislation.

Captain Woodfield feels that such a certificate would be attractive to international passenger-ship operators and charterers who could be seeking one document of safety related approval which interprets and consolidates the requirements of the complexities of modern safety legislation.

All enquiries for this service should be directed to Captain Woodfield at the Trinity House temporary address, Lloyds Chambers, 1 Portsoken Street, London E1 8BT, telephone 01 480 6601, telex 934341 UNITAS G.

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